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BENGAL PLAN

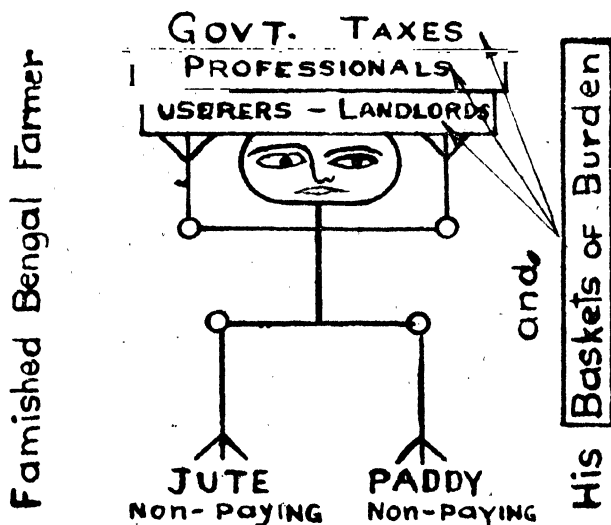
1946—55 : Recuperation and Rehabilitation through
Recolonisation and complete Mechanisation.

1956—65 : Attainment of Manhood by Intensification and
Perfection of the above.

BY

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Prov. Conference in 1930.

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FOREWORD

The problem of Bengal is not re-construction, but **regeneration**. In a province where more than half the population is devitalised, so much so, that they do not respond to any betterment stimulus, whether in the shape of food or clothing or education, for that population, emaciated in body, emasculated in mind and incapable of labour, the economists ordinary prescription will be altogether ineffective. For more than 50% of the population of Bengal, physiologists must come to the rescue. These men have gone beyond elastic limit. Either you must kill them outright, or make provisions for them right away so that they may recuperate. Hospitals, Nursing homes, rest and recuperation centres are necessary, say for at least 5 years to come. Can we devise ways and means to do it? This is our **first problem**.

The total cultivable lands in Bengal is 35,165,460 acres. This including culturable wastes and current fallows. And the population is 61,500,000. Therefore the per capita holding comes to 572 acres (1.72 bighas). This land must feed, clothe, house and also produce a surplus for a man. At present, if all the lands under plough produce nothing else but rice, even the rice needs will not be met. We invite the economists to face this, our **second problem**.

Bengal's industries are mainly foreign owned, whose labour force is mainly imported from other provinces. She does not produce her own clothing or the cotton for that. Cotton has to travel hundreds of miles and sometimes thousands of miles to reach the few mills which she has. What are the chances for the "Sixty millions" to be provided with even 10 yds. of cloth per head not to speak of 30 yds. recommended by the exalted economists and industrialists in their utopian frenzy? Can Bengal ever be self-supporting

in cloth and provide her sixty millions with summer and winter clothings and will she have means to purchase it? This is our **third problem**.

Any plan for Bengal must take into account the human, the agricultural and the clothing problems presented above. Dissertations on economic philosophies or academic discussions, will not feed or clothe or regenerate us. We want blue prints and time tables with which we can start tomorrow if necessary. For Bengal, the essence of planning is in "**immediateness**"—now or never. Minutest details have to be worked out on past experience and the plan has to be given a practical shape without delay.

The **cardinal points** in this Bengal Plan are:—

- (1) It is drawn up on provincial basis (1935 constitution).
- (2) The political and economic background is "village communism,"—working from bottom up.
- (3) Creation of Manhood by releasing the energies of the people for self-improvement is the first necessity.
- (4) Mechanisation and Democratisation are fundamentals, on which the whole plan rests.
- (5) Interchangeable occupation, so that every man is made fit for every work.
- (6) Decentralised Industry with centralised guidance and Co-ordination.
- (7) Distribution according to **needs** to be prescribed by physiologists, economists and agriculturists.
- (8) Rehabilitation of the entire population in planned, "Vakri" towns of 9 towns in a group, each with population of 3,000. Each "Vakri" town is self-sufficient in everyway. The Central "Vakri" town will be the **Leader** town.
- (9) In education, the principle will be—every man a teacher and every teacher a student. Every man to be machine conscious and to be taught

up to middle school standard from illiteracy in two years.

(10) Every town to contain a hospital.

(11) Immediateness.

Nothing has been said in this plan which the Government of Bengal **as it is** cannot give effect to. No more money will be necessary which they do not have at their control, and no more power which they do not already possess. With the help of the Disposal department of both men and machineries, and with the machine tools and organisations of Jessops, Burns, Braithwaites, Britannias, Bantras and Bellilios Road, we can build Bengal on the Bagda Vakri plan. Graduates of Sibpore and Jadabpur Colleges, with overseers, sub-overseers and technical men from numerous other schools, can supply **all** the technicians needed for the purpose. All research work can be centralised in the Science College of the University. The pre-eminent scientists who manage and control the activities of the said institution can enlarge its scope of work in no time. The motor mechanics and drivers, released from war work can be sent to the fields for tractor driving. All colleges of Bengal can be made to work intensively to produce planners and workers on short time course. The Floud Commission has paved the way for nationalisation of the lands of Bengal, and papers and platforms have prepared the minds of the landlords and of the ryots for such nationalisation. Above all, the most potent factor in Bengal's national life is her true sons—the **journalists**. From the time of Surendranath and Bepinchandra uptil now, they are the only people who have suffered most and worked most. In nation building schemes, the much maligned so-called British journalists in Bengal have contributed their quota, and it would be height of ingratitude to decry them and biggest foolishness to disown and disclaim them. Any plan, once approved, will have the full blooded support of these journalists, and they are the only people who can create the proper atmosphere. All in all, Bengal has channels through

BENGAL PLAN

which her creative and reconstructive energies may flow, and she does not need the snail-speed of Kodali digging of new channels at this time of her greatest disaster. She needs volume and speed with which only **clear water** may flow through these already existing channels.

Back Ground

The plan given in this book is the result of experimentations for 15 years with men, money and machineries on the agricultural fields of the Bagda Farm, in the Rungpore district. Much of this was the subject of a lantern lecture—**“Food problems of Bengal” at the Rajshahi Political Conference in 1930** and the summary of the lecture was published in many papers then. That was a cry in the wilderness. The political bosses of the province would not entertain any idea of reconstructing Bengal on economic lines with agriculture and agricultural industry as foundation. I was told, very brutally, that millenium would follow as soon as the country was free. I met with the same luck at the Jalpaiguri Conference in 1939. Though my Resolution about preliminary survey of Economic and Agricultural Condition of Bengal as a prelude to Bengal Planning was read from the Chair, and unanimously passed (as a matter of courtesy) at the fag end of the Conference, I was told that it was only a “pious resolution”. The whole Bengal was busy with problems of distribution of the “rob Peter and pay Paul” variety. The ideas of production was at 100% discount. Nothing could be done but to retire, experiment and formulate, and wait for the time to come. On the other hand, the Bagda Farm which comprised about 4,000 acres of land on the bank of the river Karatoa, gathered all modern up-to-date machineries of cultivation and irrigation. About 3,000 acres, on both sides of the Central farm of 1,000 acres, were divided into small parallel plots (of 16 to 33 acres) for gentlemen farmers, known as “Vakris” (“VA” means Vadra, i.e., gentleman. Kri means Krishak or farmer. So Vakri means gentlemen farmer or Genfarmer. These words were coined). The

Vakris were to get all the facilities of machineries and expert advice from the Central Farm. The Central Farm was the owner of all machineries. A short description of Vakri farms is necessary because the **Vakri towns** recommended in this plan would resemble in many details to the Bagda Farm with some modifications found necessary by experience.

When the political bosses of Bengal were busy either in formulating immediate plans of freedom, or dividing and distributing the unearned income of the Zaminders amongst the masses, the Government of Bengal through its local agents managed to crush the Bagda movement by ingenious means and the Ward Zaminder applied all cruel methods conceivable to scare away the **Vakris** from the land. To crown all, an I. C. S. gentleman in charge of Arakan evacuees and who was guest of the farm for several days in 1936, marched in, and occupied the farm on behalf of the Government of India for Arakan evacuees. It should have been the business of the Government to experiment on a method of reconstructing Bengal. It should have been their duty to help those who attempted at such a solution, but instead, the Government or their agents found it convenient to crush it and look around with an air of victory.

It is very urgent that the pamphlet should be penned now and published immediately because, it contains practical and experimented methods of starting on reconstruction right away without waiting for true national government or a complete freedom to come. By the time the mellenium comes, at least two crores more would be swept away from the villages of Bengal and what is worse, the rest would be devitalised beyond elastic limit or redemption. It is time to cry halt to the different reconstruction movements, which backed by large purse and position have come to the fore-front, and scrutinise whether they are broad based on the fundamentals of life and living or on the ideals which are a peoples' own. I place my plan before the public of Bengal for scrutiny, acceptance or rejection.

I take this opportunity to thank the organisers and entre-

preneurs of the Bagda Agricultural Farm for affording me opportunities to experiment on a large scale with men, money and machineries for more than a decade. It would have been impossible for me to put the "Bengal Plan" before the public of Bengal, had I not had the opportunities to be with them for the last 15 years wasting their monies on experimentations on an agricultural plan for Bengal and Vakrism. My thanks are also due to my friend Mr. S. K. Roy, the late propaganda officer of the Government of Orissa. From the time of the great famine of Bengal in the beginning of 1943, he has been pressing me hard to put my plans for Reconstruction of Bengal before the public. I had to yield to this pressure finally and had to take up my pen in the last week of December, 1944. He has been a great help to me in sifting through contemporary literature regarding planning. But for him, my plans would have remained unwritten and unpublishd.

Though the Bengal Plan is specifically meant for Bengal, the **principles** of the Plan are applicable to cases of other provinces and States. The modifications necessary would be slight. The author will be glad if he could be of any service to them. **What the author wants is not merely to write out a Plan, but to work out the Plan in all its details.**

I. FUNDAMENTALS

1. **Democracy** and **Machine** have come to stay. Every organisation whether political, economic or social—should be democratic. Every man and woman must be made **machine conscious**.

2. Bengal lacks in **manhood**. For evolution of manhood, creation of **surplus energy** and **discipline** are prerequisites.

3. Charity degenerates the giver and the receiver—whether it be a political, economic or social charity.

4. England cannot **afford** to loose India politically or economically without digging her own grave. Any plan based on political and economic freedom of India will find its grave in the libraries and book shelves of the erudite.

5. “**Village communism**” and **economic self-sufficiency** are the foundations on which the future socio-politico-economic evolutionary structure has to be built and no amount of grafting or patching and white-washing will suit the needs or genius of the people.

6. **Agriculture**—intenso-extensive and completely mechanised ; and **Agricultural Industry** to suit the mechanical consciousness of the people—de-centralised with a centralised guidance and co-ordination will form the foundations of the economic structure.

7. **Machinism**, **overproduction** and **unemployment** are inseparable. The solution lies in allowing the machine to produce only the **needs**, and redefining the word unemployment.

8. Bengal's problem is all round **Regeneration**. Reconstruction is only one of the means of Regeneration. Post-war or prewar has nothing to do with it.

9. Life and Manhood first and the rest afterwards.

10. Every man a soldier, every woman a nurse. Military training disciplines a man quickly. Nursing inculcates ideas of service and system in woman.

II RECOLONISATION

(Through Re-distribution of all Agricultural Lands).

Since 1930, Bengal's agriculture is absolutely non-paying. The selling price has not fetched the cost of production of agricultural produce. Between immediate extinction by giving up the business and the slow death by continuation of a non-paying means of production, the Bengal Farmer chose the second alternative. He could not do anything else, because he has to feed so many mouths. From the Governor and his Ministers down to the village chowkidars, from the Maharaja down to village teshildar, from the fat Calcutta banker down to the village usurer, he has to feed every body every day, and keep them in comfort. He starves with his family half the days of the year.

Today, the farmer is devitalised, his cattle degenerated, his soil impoverished. Due to continual fragmentation of uneconomic holdings, a vicious circle has been set up leading to a much greater disaster, than that, which Bengal witnessed a year ago. The disease is organic, and radical cure is needed. According to reports of the Floud Commission "it is virtually impossible under present conditions to suggest any remedy for it." (Page 86, Vol. I). So the remedy must be fundamental and immediate. Not a minute to lose. The shilly-shally, procrastinating ways of commissions and committees and of eternal path-finders, will not do.

Food has to be grown on the land and in the **sea**. If the population of the province has to be fed according to the scale prescribed herein, redistribution of the entire lands of Bengal will become a necessity. Food has to be distributed according to **needs** and not according to **ownership** of lands. A man doing strenuous work for 8 hours a day, need more quantity and better quality of food than a man who is doing

nothing. If food is distributed according to ownership, the needy man may have to starve and the not-needy may have to be stuffed. Thus the ownership basis of distribution of food is unscientific from physiological standpoint. Our business is to regenerate Bengal and not to maintain artificial standards, either of food, clothing or housing or sanitation. Artificial standards must submit to basic needs.

Even if all the lands of Bengal are equally distributed amongst the population, the average family holding will be uneconomic even for ordinary cultivation. The only solution lies in **mechanisation of agriculture**. When mechanised, the small family holdings must coalesce into big plots for operation of tractors. To ensure regular work **two** tractors are necessary. To make this mechanised unit economic, a unit of about 1,500 acres is necessary. So, a **Vakri town** should have at least **1,500 acres** of cultivable lands.

Approaching the problem from the other point of view, it is found that—

The total cultivable lands in Bengal ...	35,165,470 acres
Population	61,500,000
Therefore, the per capita land in acres ...	·572 acres
or approx. ...	1·72 bighas

For a community of 3000, the allotted lands should be $3000 \times \cdot 572 = 1,716$ acres.

From the proportion of land and water in Bengal, 1,700 acres will have 300 acres of ponds, canals, rivers, bills, etc. So the total acreage will be **2,000 acres**.

Excluding the city population, the per capita holding may be increased from ·572 to ·63 acres including inland waters of about 204 acres. Thus a Vakri town will have an area of $\cdot 63 \times 3,000 = 1,920$ acres or 3 sq. miles.

So a Vakri town, the smallest unit, which will replace villages, will have 3,000 population and 1,920 acres of land and water of which 1,700 acres will be cultivable land.

Thus, 1,920 acres must be **held together** for agricultural and industrial purposes to form a unit ; and according to available per capita land in Bengal, this should maintain i.e. feed, clothe, house, etc., a population of 3,000.

This land is **indivisible**, because otherwise the mechanical means of production cannot be applied. The proprietary right can only be **joint ownership under Co-operative System**. So whether we want it or not, in order to enable us to exist, two things are forced on us which are Democracy and Mechanisation-Democracy as regarding rights, privileges and ownership of land, and mechanisation in agriculture and in means of production of consumable goods.

In the light of this neo-economics, many words, ideas and phrases will become obsolete. They are as it were, the first casualties. Unfortunately, they are the most pet words of the other three schools of planners. These words and phrases are:—(a) Collective farming ; (b) Standard of living ; (c) Ryots ; (d) Farmers ; (e) Cultivators ; (f) Village ; (g) Rural and Rural reconstruction ; (h) Employment ; (i) Cottage industry, etc., etc.

Collective Farming presupposes distribution according to ownership of land and not according to needs and so the idea is obsolete. **Standard of living** presupposes artificiality in living, which, due to unusual condition of production as prescribed above, cannot be afforded.

Ryots, Farmers etc.—In this scheme of mechanisation, those who are conversant with machineries are to cultivate. In course of time, following the policy of interchangeable occupation, every Vakri will be a cultivator and every farmer a mechanic. The only Ryot in this scheme is the Co-operative Vakri township. **Village**—Due to redistribution of land mentioned before in plots of 2,000 acres for co-operative Vakri towns, the villages will go out of existence. **Rural Reconstruction**—If there be no village, what are to be reconstructed?

Cottage Industry—Mechanisation and cottage industry cannot go together. The Vakri town industry, which will produce all consumable goods, will be mechanised. Only mechanisation can save Bengal now, so cottage industry must go. All departments connected with the so-called rural Reconstruction and Cottage industry must be scrapped forthwith as wasteful of public money. **Unemployment**—The ordinary idea of employment is that one has to work so many hours a day for his living. This stereotyped idea is unscientific, unethical and therefore should be obsolete. Why should a mathematician, who could do much in his own line, should be compelled to earn his living as a clerk, much against his natural temper and inclination. Let the **machine—the most efficient slave of the 20th century**—feed and clothe us, and let us evolve according to our inclinations. It will be prostitution to use the body merely to earn a living. It will be unethical to demoralise the mind by bringing it down to a low level, to which, the ordinary earning man has to bring himself to placate the environment. It will be foolishness to waste our energies for a thing which requires only pressing of a button to accomplish. The idea of earning a living or employment will be obsolete in a scheme of mechanisation.

Distribution—Present villages must go. In an area of about 1,920 acres (including inland waters), a population of 3,000 has to be rehabilitated according to plan. This colony will have about 1,716 acres of cultivable lands and 204 acres of ponds, canals, etc. Thus, in whole of Bengal, there will be 20,500 towns or say about 20,000 towns. With an average family of 6 in Bengal, there will be 500 houses in a town. One-sixth of an acre ($\frac{1}{2}$ bigha or 10 kathas) should be set apart for homestead lands for each family. For 500 families in a Vakri town, about 83 acres are required. Buildings for housing all, means of production of consumable goods for the colony, offices, granaries, godowns, etc., will occupy 25 acres and roads about 50 acres, thus about 166

acres will be required for all these. Thus the available lands for a colony will be distributed in the following way:—

Production of—	Acres	Homestead lands	Acres
Rice ..	1,000	..	83
Pulses ..	210	Workshops, factories,	
Oil seeds ..	255	stores, etc. ..	33
Sugarcane ..	40	Roads ..	50
Vegetable ..	45		<hr/>
			166
	<hr/>		
	1,550		

Cattles to be fed from hay, cane tops and oil cakes. No separate pasture ground is available.

Fish to be supplied from ponds and from the sea (dehydrated).

or

	Acres
Lands required for agricultural purposes ...	1,550
Other than agricultural purposes ...	166
	<hr/>
	1,716
Fisheries	204
	<hr/>
	1,920

Nine Vakri towns will form a group. The town in the centre to be known as **Central Vakri town** and others to be known as **Vakri towns** with a number. Thus $V_1, V_2, \dots V_8$ will denote the Vakri towns in a group, and the Central town to be known as C-town. The C-town will be the **brain centre** of the group. The constitution of the V townships will be a little different from the constitution of the C-townships.

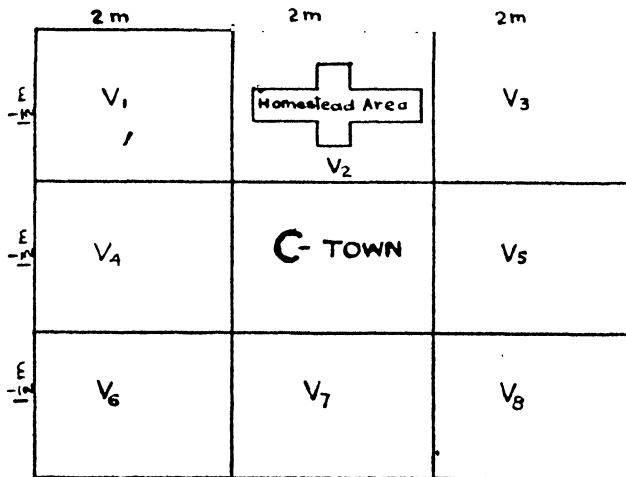
Acquisition of Land—All rights, titles and interests on land, from Zamindari to Ryati, to be purchased according to the provision in the land acquisition Act for Co-operative settlement.

All lands must be free of encumbrances.

The price to be calculated as follows:—

(a) All Zamindari & tenure holders rights etc. fetching an income of Rs. 3/- per acre as rental at 10 times the income ...	30/-
(b) Taking 100 crores as rural indebtedness, the indebtedness per acre of land to be paid to Mahajans ...	30/-
(c) Price of Ryati rights minus the debts, paid for separately ...	40/-
	<hr/> 100/-

That is, with Rs. 100/- paid for per acre, the lands should be rent free and free from all encumbrances.



V₁ to V₈—Vakri towns each with a population of 3000 and an all told area of 1920 acres. Homestead area and Factory area are shown in V₂.

c—C Vakri town. The brain centre of the group. Each town is 2 miles long and 1 1/2 m. wide. The overall dimensions of the town in the group is 6 m. x 4 1/2 m.

For 1920 acres in a Vakri township, the total price to be paid will be 1920 × Rs. 100/- = 1,92,000/- or Rupees Two lakhs approximately.

Ownership—(a) All agricultural lands, factories and Road lands will be jointly owned under the Co-operative system i.e., the Co-operative Vakri Town will be the owner. This land is indivisible for all times to come.

(b) All means of production are also the property of the co-operative society and are also indivisible.

(c) All homestead lands will be tenant ownership under the Co-operative organisation and will be available under hire purchase system. The homestead land is also indivisible but transferrable according to Co-operative Bye laws.

Investment & Income:—The investment required for a C-Town will be as follows:—

1. Price of 2000 acres of land @	
Rs. 100/- per acre ...	2,00,000/-
2. Two tractors and a set of agricultural implements, trucks, tubewells etc.	50,000/-
3. Industrial equipments including means of production, workshop, power plants etc. ...	1,50,000/-
4. House and house fittings @ Rs. 200/- each ...	1,00,000/-
	<hr/> 5,00,000/-

i.e., for a C-type colony of 3000 population accommodated in 500 houses, the total investment required to stabilise them would be Rs. 5,00,000/- or Rs. 1000/- per family.

The possible income that can be obtained from this investment would be as follows:—

A) Agricultural income—

The basis of agricultural income calculation is rice, i.e., the income that would accrue if all the lands be under rice cultivation under improved conditions.

Assumptions are:—(a) 50% of the lands will have 2nd Crop.

(b) Due to manuring, irrigation, better seeds and timeliness there would be 30% increase in production.

Present production of rice is 13 mds. per acre. 30% more would be 17.33 per acre. With 50% increase in cultivation due to 2nd crop, 2400 acres (1600+800) would be under cultivation. Hence

Production of rice would be	...	41,592 mds.
Production on 1600 acres @ 13 mds.		
per acre	...	20,800 mds.
<hr/>		
Excess production	...	20,792 mds.
or say	...	20,800 mds.

Taking the cost of production of Rice
@ Rs. 1/8/- per md. the cost of
production for 41,592 mds.
would be ... 62,388/-

The price of 20,792 mds. @ Rs. 8/-
would be (This is the excess pro-
duction over the needs of the
Vakri township) ... 1,66,400/- appr.

Therefore the agricultural profit on
rice basis ... 1,04,000/-

B) Industrial Income—

The investment in Industry is Rs. 1,50,000/-.

Taking the net profit at 10%, after deducting all costs
including management, interest, depreciation etc.

The net profit comes to Rs. 15,000/-.

So the net profit of the Colony is—

Agriculture	...	1,04,000/-
Industry	...	15,000/-

Rs. ... 1,19,000/-

Disbursement—

1. Interest on 3,50,000/- @ 3% (the int. on industrial investment has already been taken into account) ...	10,500/-	
2. Interest on working capital— Rs. 50,000/- at 3% ...	1,500/-	
3. Depreciation @ 10% on Rs. 1,50,000/- (invested in houses and agricultural implements) ...	15,000/-	
	<hr/>	
	27,000/-	27,000/-
4. Repayment of loan per year on 20 Yrs. basis ...	25,000/-	
5. Expenses on services & Sanitation, Education, Roads and Welfare works ...	40,000/-	
	<hr/>	
	65,000/-	65,000/-
	<hr/>	
		Rs. 92,000/-

Total income of the colony per year ... 1,19,000/-

Total expenditure including repayment of Rs. 25,000/- towards capital ... 92,000/-

Sulplus reserve Rs. ... 27,000/-

Thus if the Co-operative colony starts by **borrowing Rs. 5 lacs**, by mechanisation of all means of production in units of 1920 acres and 3000 population, it can, after paying for all charges (interest and depreciation), for welfare and also paying Rs. 25,000/- towards borrowed Capital can make an income of Rs. 27,000/- per year. In other words, it can pay off its debts in course of 20 years and also accumulate a surplus of Rs. 5,40,000/- (27,000/- × 20 yrs.) more. If no depreciation and reserve are provided for, the amount of capital expenditure can be paid off in course of

7 years. After repayment of all debts, when no interest will have to be paid, the colony, with its own capital can start on the 2nd 10 years plan of "**Attainment of Manhood.**" If the productivity of the means of production and men can be increased, the debt can be paid off in 5 years. For example, if 25% more lands can be brought under cultivation i.e., by bringing 400 acres more under 2nd crop, the income of the colony will increase by about 45,000/- more per year and about Rs. 1,12,000/- will be paid off towards the debt every year.

WHERE AND HOW TO START

Function of C-towns—

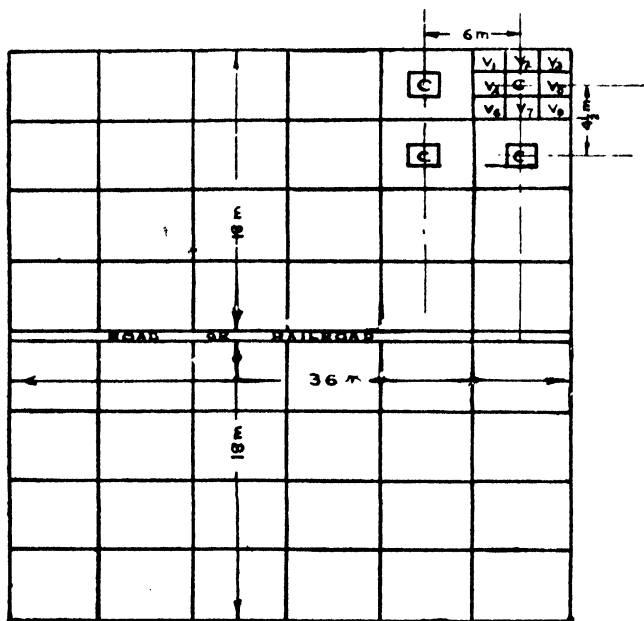
For 8-V Towns, there is one C-town in the Centre. The function of the C-towns will be—(a) to mobilise and train the intelligensia for work ; (b) to set up models of Vakri towns ; (c) to manufacture, supply and repair machineries for V and other C towns including machineries to be used as means of production ; (d) to set up research and experimental centres on a small scale to co-ordinate with the Central research and experimental centre of Science College ; (e) to supply agricultural machineries to V-towns and cultivate fields for them, if such V-towns cannot afford to have equipments in the beginning ; (f) to help starting other C & V-towns by supplying men and machineries.

Arrangement of groups—It is necessary therefore that C-towns should be started **first**. Each group of Vakri towns (9 towns in all) is 6 miles in length and $4\frac{1}{2}$ miles in width. Nearest to colliery, areas in West Bengal, and as much as possible in uncultivated khas lands either under Zamindar or under the Government, the first 48 C-towns of Bengal should be started according to plan given below. The site should be so selected that the groups are placed on either sides of existing railway lines or any trunk road. This will cover an area of 36 miles \times 36 miles (the area of the lands occupied by the railway is not included).

Where to start—The starting to be made in West Bengal because:—

(a) **Power Stations**, can be started in colliery areas to supply all powers needed for West and Central Bengal (districts of 24 pergs. part of Jessore, part of Nadia and part of Khulna). Unlike the Hydro-electric schemes to supply North Bengal, this power station or stations with coal as fuel at the pit, and steam turbines as prime movers could be started without delay. The high voltage transmission lines can pass through these Vakri towns supplying cheap power to all of them. Starting modestly the capacity of the plants can be increased, and transmission lines extended as

The first group plan



West to East. The Vakri movement taking a start from the West of Bengal will be extended towards the East.

more and more Vakri towns come under operation. The British and American manufacturers will have an opportunity to supply these machineries forthwith.

(b) More **Fallow lands** are available in these districts.

(c) The lands are mainly under **one crop** which is paddy. Great improvement can be effected by bringing these lands under **two crops** instead of one by power farming.

(d) The **lands are high** and better suited for power farming.

(e) **Irrigation canals** can be better maintained in this soil than in the sandy and alluvial soils in lower Bengal.

(f) Being near to **Coal & Iron** the C-towns will be able to work more efficiently.

(g) Being **near Calcutta** the groups, which require much attention in the beginning, could be co-ordinated easily from industrial and other directions.

(i) These areas need help most because these are the greatest **famine areas** of Bengal.

EQUIPMENT OF C-TOWNS

As C-towns are going to be started first, it is necessary to give in detail (as much as possible under the circumstances) the equipments that are necessary for the purpose.

I. Agricultural—

- | | | |
|--------------------|-----|--|
| 1. Two tractors | ... | One caterpillar and one wheel tractor. |
| 2. Disc ploughs | ... | 2 sets. |
| 3. Harrows | ... | One set Disc and another set spike tooth. |
| 4. Seeders | ... | One set. |
| 5. Harvester | ... | One. |
| 6. Winnowers | ... | One. |
| 7. Thrasher | ... | One. |
| 8. Trucks (3 tons) | | Three. |
| 9. Trailors | ... | Two. |
| 10. Tubewells | ... | Three—each yielding at least 50 thousand galls. per hour fitted with Turbine Pump driven preferably by electric motor. |
| 11. Ditcher | ... | For making shallow ditches in the cultivated lands. |
| 12. Cultipacker | ... | One. |
| 13. Road Grader | ... | One. |

II. Industrial—

All C-towns will have machineries for producing consumers' goods, and workshops to produce the means of production. In the list given below, the C-Town workshop must be in a position to manufacture all machineries **except** the power plants, spinning machineries, stitching and sewing machines, pipes and a few others. As soon as the C-towns are started, it will be their duty to start producing all machineries for V-towns in their group, and complete them in course of a year. After stabilising their own V-towns, they should proceed manufacturing for other V and C-towns, so that, all means of production of V-towns and almost all of C-towns of the future could be manufactured in the existing C-towns. Whether all C-towns of West Bengal should be started first before V-towns are brought into existence, will be a matter of policy. If it be desirable to start C-towns first, working two shifts in C-town workshops, each C-town workshop will be able to produce all machineries for 8 more C-towns, provided we get all machine tools from the proposed Disposal Department. Thus starting with 48 C-towns in the beginning as proposed before, the workshops in these C-towns will be able to produce means of production for $48 \times 8 = 384$ C-towns. Thus in 1946 & 1947, the number of C-towns that could be started is 432 ($48 + 384$). Now, the lands available for cultivation in the Burdwan division including current fallows and culturable waste is 6,756,454 acres. The maximum number of C-towns necessary for this is **380**. So, according to plan, industrial equipments for 52 more C-towns will be available from these workshops. Approximately 2,100 C-towns will be necessary for whole of Bengal. Therefore for East, North & Central Bengal about 1,800 C-towns will be necessary. These can be established in the 3rd year.

Means of production and other equipments necessary for C-towns are:—

(A) For production of Food—

(a) Rice hullers.

- (b) Oil Ghanies.
- (c) Oil Expeller.
- (d) Wheat grinders.
- (e) Dal grinders.
- (f) Dehydrating plant for fish and vegetables.
- (g) Sugar mill (50 ton plant).

(B) For production of Wears—

- (a) Power looms for Cotton fabrics.
- (b) Power looms for Woollen fabrics.
- (c) Ginning and spinning mills.
- (d) Knitting machines.
- (e) Tannery.
- (f) Leather Shoe factory and repair shop.
- (g) Rubberised shoe factory.

(C) For Dairy—

- (a) Silo Cutter.
- (b) Oil cake disintegrater.

(D) For Washing—

- (a) Washer.
- (b) Rinser (Centrifugal).
- (c) Driers.
- (d) Ironer.

(E) For Workshop—

- (a) Wood shop machines—Wood lathe ; Drill ; Circular and band Saw ; Tenoning and Mortising ; Planing machine etc.
- (b) Foundry—with equipment.
- (c) Forge shop—with equipment.
- (d) Machine shop—Lathe 4 ; Drill 3 ; Saw 1 ; Planer 1 ; Milling 1 ; Shaping 1 ; Grinding and Polishing 2 ; Presses 2 ; and necessary shaftings, pulleys etc. Punch and Shear 1 ; Drilling machine 2 pcs.
- (e) Welding—Oxyacetyline for the present.

(F) For Water Supply—

Tubewell, Pump, Overhead Tank and Staging.

(G) Printing Press—**(H) For Power—**

100 K.W. Steam Plants—2 Nos.

(I) Boring Machine—

3 sets with Casings.

The source of power cannot be determined now. If petrol can be had say at -/8/- a gallon for productive purpose, and petrol engines at the command of the Disposal Department can be had for small prices, it will be advisable to run those engines for power. But if these cannot be arranged, it will be cheaper to run steam engines with coal which will be available nearby. **The best source of power will be Central Power Station mentioned before. To facilitate matters, the first duty of the Government of Bengal will be to arrange for Central Power Stations at the coal pits and also arrange for over head high voltage transmissions upto Calcutta.**

Consumption of Power—

For every C-town, the consumption of power will be as follows:—

1. House lighting	...	...	50 k.w.
2. Workshop, etc.	...	...	50 „
3. Factories	...	...	100 „
			<hr/>
			200 k.w.

The peak load of 200 k.w. is expected in the evening of the 3rd week of December when the workshops, factories and houselights will draw power at full load. On this basis the capacity of the power plant at the pit should be at least 80,000 k.w. or better 100,000 k.w. for 380 C-towns of the Burdwan Division.

Consumption of power for V-Towns.

For each unit—

House lighting ... ..	... 50 k.w.
Workshop Pump, Dairies, etc.	... 50 k.w.
	<hr/>
	100 k.w.

For 380 C-Towns, there are $380 \times 8 = 3040$ V-Towns.

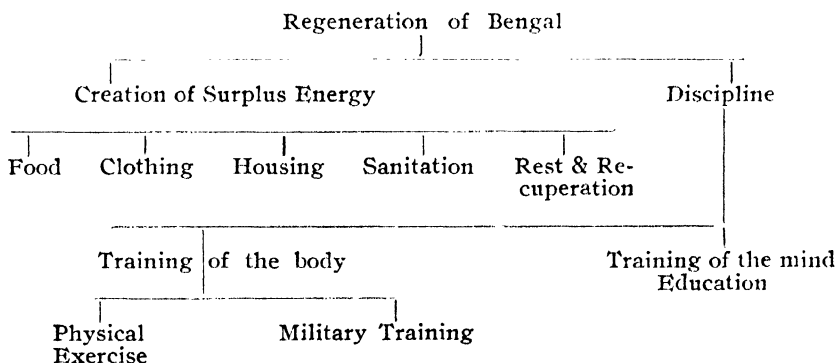
The Peak load will be about 100 k.w.

Therefore the capacity of the plant will be $100 \text{ k.w.} \times 3,040 \text{ V-Towns} = 304,000 \text{ k.w.}$ or roughly **300,000 k.w.**

So when the Burdwan Division is re-colonised according to plan, it will require a power plant of 400,000 k.w. to supply all the electric needs of the Vakri towns of C and V types.

III. THE PROBLEM—REGENERATION OF BENGAL.

1. To create a people with **Surplus Energy** out of a devitalised people of **difficient Energy**.
2. To train that people to highest **Discipline**.
3. To release the energies of that people for **self-evolution**.



For 100 years or more, Bengal has been going down in energy, discipline and system—the foundation of an organised

existence. The complete routing of the old socio-economic and socio-religious orders, and our inability to adjustment according to new conditions due to tremendous mental inertia inherent in orthodox people, are the root causes of this catastrophe. The impact of foreign ideals was the last straw on the camel's back. A group of people who served the company and the Britishers in different fields up to the end of the last century recouped to a certain extent, and the result was the Swadeshi movement in the beginning of this century. The movement exhausted the accumulated and un-replenished energy in course of about 15 years, and since 1915 or thereabouts, Bengal has marched backwards in energy, discipline and system. The residual brain power has groped in darkness for new ideals of quick rejuvenation, but the difficient energy and non-discipline have produced their natural effects of non-will, non-determination and non-execution. The result has been cheap imitation of non-essentials, meaningless slogans and abortive propaganda.

Great men like Iswar Chandra and Ashutosh were products of old socio-economic and socio-religious orders. Surendranath was the product of politico-economic and socio-economic orders of England. All these great personages were men of limitless surplus energy, discipline and system.

The world order has changed since these men thrived. Today **Democracy** and **Machine** have created a new order. The west accepted machine in toto and is experimenting on the scope and limitations of democracy. We have negatived both. **If Bengal wants to go ahead, she must accept both democracy and machine in all its aspects, and the future politico-economic order must be based on these two essential world forces.** In this new order, there is no question of minimum or maximum standards. There is only one standard which is based on the **needs** of a group or of an individual as the case may be. Let the doctors say what a man should eat and also what he should not. Let the economist say whether he can provide the prescribed

food on the basis of production and so on. If the Master-doctor says that half the people (who according to productionwallas should work for 8 hours a day) are men of deficient energy and so should take rest and recuperate for 5 years, it will be the duty of the master-economist to devise ways and means to maintain them as prescribed, and arrange for production with the help of machines.

In fact, it will be necessary to send half the adult population of Bengal to Nursing homes for recuperation for at least 3 years. At least two or more years will be necessary to train them intensively to create surplus energy and bring system and discipline in their lives. We take an American as our specimen. His ability to work unceasingly for 12 hours a day, day in day out, his absorption into work, his organizing power, make him a typical man with surplus energy, discipline and system.

To produce a people of this type in Bengal will require, rest and recuperation for 5 years and selective breeding for two generations. But it can be done.

To summerise—**The broad problem of Bengal is to create a people with surplus energy, discipline and system in a democratic and mechanical environment.**

1. **Surplus energy.**—Under the present system, one has to work 8 hours a day for his living. If he gets tired after 8 hours' work, he has no time to devote to processes of self-evolution. For example, after a day's work, a labouring man should go to night school for self-advancement or a clerk may have to go to a gymnasium for physical exercise. If the energies are all spent up in 8 hours' work, then, he has no chance of investing his energies in anything else. It often happens that a man cannot work even 8 or 6 hours a day. He is a man of deficient energy. In the beginning it should be laid down as law that no body should be allowed to spend more than half of his energy in earning a living. Of the other half, one-fourth should be spent in self-advancement and the other fourth reserved as residual. Thus a man

who gets exhausted by say 6 hours' work, should be allowed to work only 3 hours for his living, $1\frac{1}{2}$ hours' for self-advancement, $1\frac{1}{2}$ hours' energy should be kept unspent so that he may feel fresh all the time. In about 3 years' time this man may be raised from a level of deficient energy to one of surplus energy of 12 hours a day.

2. **Discipline.**—The first item in a nation's life is creation of energy. The second item is—conservation of energy. The third item is the ability to focus the energy to produce work as desired. The fourth item is judgment. Bengal is devitalised and so we have been thrown back to the first stage. The Punjab is in the third stage. We are suffering much from physical and mental inertia. The body and mind do not respond to the call. When surplus energy is created, the second item therefore will be to discipline the mind and body so, that on the call, work may be started, compressing the time of transition to a minimum. We were built on religious discipline, America on industrial discipline and Germany on military discipline. One form of discipline is convertible to another form. America's industrial discipline was converted to military discipline and Germany's military discipline was converted to industrial discipline. The religious discipline of Sir Ashutosh was converted to business discipline.

IV. FOOD—(GENERAL OBSERVATION)

What should be the food of Bengal? The men who will decide on this are:—The economists, agriculturists and physiologists.

From economists' point of view, if all the lands available for cultivation in Bengal produce only rice and nothing else, even then Bengal will not meet her rice requirements. The physiologist's balanced diet prescription is therefore out of the mark. By increasing the agricultural production by even 50% within the next 10 years, the population of Bengal cannot be fed as prescribed. The solution therefore lies on two factors—

- (b) Complete mechanisation of agriculture and irrigation.
- (b) Production of protein and fat from the Bay of Bengal.

In other words, relieving the pressure on the land and bringing the pressure on the sea.

By complete **mechanisation**, more than 50% of the lands will have two crops instead of one crop as now. At present, it takes about $2\frac{1}{2}$ months to harvest the paddy crop by manual labour. The fields get dried up and so become hard with ordinary tractor harvester and binder, the work of harvesting can be completed in 15 days. The lands can be quickly ploughed as soon as they are harvested, irrigated and made ready for a second crop.

Irrigation problem of Bengal is more difficult than in Upper India. Drainage is also a big problem. To start with, for paddy crop, crude oil engines of the fool-proof hot bulb type with centrifugal pumps, often installed in boats specially made for the purpose, with hose pipes will do the work quicker than the ground installed pumps and engines. This is for lands through which drains, canals, rivulets, etc. pass, lands which are from 3 to 6 ft. above the surface of

water. The boat can be drawn from place to place along the banks and water pumped for irrigating adjoining fields. This system will eliminate necessities of levelling the fields and making costly high surface drains. A 10 h.p. engine and a 60,000 to 1,00,000 gallons per hour centrifugal pump will irrigate about 10 bighas an hour in the wet season and with 10 hours' work per day will irrigate about 100 bighas a day (33 acres).

The next quick scheme of irrigation will be by tubewells (from 12" to 18" dia.) with turbine pumps and crude oil or better, gas engines. These will be effective in high, undulating and hard soils for both paddy and winter crops. Practically three-fourths of the lands of North Bengal, more than three-fourths of West Bengal and one-fourth of the lands of East Bengal could be irrigated by tubewells.

Details of these plans of irrigation have been worked out by the author which will be published when required. River training, which is in its infancy in Bengal, will take long time and money to make it effective and by the time it begins to produce results, more than half the population of the province may clear away. The present work of the Government in the irrigation line is only a stop gap, without a concerted and co-ordinated plan and can only help in wasting the borrowed money of the Government.

Statistics show that we have no lands to produce anything else but cereals. Pressure on the Bengal lands is very great. In a nut shell (in round figures)

Net area cropped (in acres)	2,44,00,000
Population	6,15,00,000

Therefore, land per capita is less than $\frac{1}{3}$ rd of an acre or about a **bigha** per head i.e. a plot 120 ft \times 120 ft. This land has to supply one with the items of a menu published from time to time (cereals, fats, proteins, dal, eggs, fish, etc.) with clothing, housing, medicine, education etc., etc. The supply of protein is difficult. We cannot think of any meat for a long time to come. The only possible solution is to supply **fish** at about 3 ch. per day per head.

This can be done by deep sea and esturine fishing with motor boats. To facilitate transportation and preservation, the fish has to be **dehydrated**. Both the deep sea and esturine fishing boats including marine engines, can be manufactured here. The big boats for quick transportation from the sea to the nearest port for **dehydration** and marketing can be imported, and in future can be made here. The **fish oil** will be the only source of fat which we can afford to give to the 61 million population of Bengal.

So the main items of menu for the adult population of Bengal will be generally **rice, potatoes, vegetables (from kitchen gardens) dehydrated fish and fish oil**.

By getting fish and oil from the sea, we thus relieve pressure on the lands of Bengal and transfer the pressure to the Bay of Bengal. At present, sweet water fish, from rivers, canals, ponds, bils, etc., supply fish to Bengal. Roughly it may be said that this does not supply the protein needs of Bengal by 25%. The recommendation in this line will be as follows:—

- (a) Re-excavation of silted up canals, branches of rivers, etc., for fishery, drainage, irrigation and for silts.
- (b) De-welding bils, rivers, etc., and taking planned cannals from them for supplying silty water during rains to the paddy fields by pumping.

This will also increase the fishing area.

These can be done without trouble by mechanisation.

Cattle that can supply **animal protein** for Bengal are goats, pigs and beef cattle. Bulk for bulk, pig breeding produces about 10 times more meat than breeding of beef cattle and beef cattle produces about twice as much as goats in the same time. The production of animal protein by planning is out of question now and should be tackled as soon as Bengal is self-sufficient in production of cereals, oil seeds, pulses and fish.

Pulses form the second crop in Bengal. The area double cropped now is only 5% of the total area cropped. By

BASIC FOOD NEEDS OF BENGAL AND ACREAGE (Based on Aman Paddy)

Food items	Per head per day	Annual needs of Province in mds.	Acreage needs	Approx. production at present mds./year	Existing acreage under crop	REMARKS
Rice	8 ch.	280,000,000	21,525,000	249,000,000	19,200,000	Calculated at 6 mds. per acre per year.
Fish	2 ch.	69,200,000	11,530,000	30,000,000 ?	5,000,000	
Pulses	1½ ch.	52,000,000	4,300,000	2,000,000	2,300,000	Oil at ½ ch. per head per day.
Oil Seeds	1½ ch.	Oil 17,000,000 52,000,000	5,200,000	Oil 4,000,000 12,000,000	1,200,000	
Sugar	1 ch.	34,600,000	770,000	13,041,000	521,000	Milk only for children, sick and invalid.
Milk	8 ch.	91,280,000	3,500,000	12,500,000	8,525,000	
Vegetables	4 ch.	138,000,000	920,000	...	...
	26 ch.	717,050,000	47,745,000			

Notes:—At present, all *Fish* come from rivers, estuaries, ponds and other inland waters. The extra fish needed (39,200,000 mds.) must come from the Bay. All cattle fodder to come from paddy hay and sugarcane tops. So no extra lands are needed for fishery and cattle.

Thus, the *Net Acreage Needs* in Land will be—

Gross acreage needs	...	47,745,000 acres	The deficit in acreage can be made up by bringing under plough—
Less—For fishery	...	11,530,000	
For cattle	...	3,500,000	
		15,030,000	Culturable wastes ... 5,753,822 acres
			Current Fallows ... 4,683,548 "
			8,000,000 "

Net acreage needs

Present *Sown* Area

Deficit

...	...	15,030,000 "
...	...	32,715,000 "
...	...	24,728,100 "
...	...	8,000,000 "

mechanising cultivation, irrigation and green manuring, rice production can be increased by 50% thus making Bengal self-supporting. By methods mentioned before, i.e. by power harvesting and irrigation, the double cropped area may be increased from 5% to 50%. This double cropped area may be devoted to pulses, oil seeds, potatoes and if necessary, to wheat. Of the oil seeds, til cultivation should be extensive and mustard as little as possible. Bengalees should be trained to taking til oil instead of mustard oil and other preparations of til.

Milk cannot be supplied to healthy adults for the first 10 years. Only children, invalids and sick are to be provided with milk. In general, the milk consuming population under the present scheme would be about 33% of the total population or approximately 20,000,000. Taking the average per capita supply to be $\frac{1}{2}$ seer, and each cow giving 4 seers per day with an average lactation period of 9 months, and the dry and sick cows at 33% of the wet cows, the total number of cows necessary would be about $3\frac{1}{2}$ millions.

The breeding has to be done by **insemination** from start to finish. She buffaloes are much more preferable than cows, though their fodder consumption is greater than those of the cows. At present, there are 8,526,600 cows and she-buffaloes in Bengal. If all of them yielded milk at 4 seers per head, there would not have been any dearth of milk today. Out of these $8\frac{1}{2}$ millions of cows, etc., about 2,000,000 would be necessary for selective breeding by insemination. The rest would be unnecessary. The subject of food for these cattles and the lands necessary for growing the fodder would be discussed hereafter.

V. BASIC FOOD NEEDS OF BENGAL AND

THEIR PRODUCTION BY MECHANISATION

In the previous chapter—"Food (General observation)"—a general discussion has been made regarding the position of food supply in Bengal and the general methods of production by mechanised cultivation, irrigation etc. It has also been pointed out, that the basic food for Bengal should be rice and fish, and attempts have to be made from now on to develop means of production of deep sea fishing, and the subsequent curing and distribution of deep sea fish all over the province.

The basic food needs prescribed here, is not the ideal dietetic menu of nutrition experts. This is rather the prescription of the economist, which has been made in consultation with the agriculturist, the physiologist, the landlords and the traditionwallas. Even after giving effect to the plan of "Recolonisation" discussed before, Bengal cannot afford to offer more than this for another 10 years to come.

In the present chapter, a general dietetic menu will be given which has been called the "Basic Needs". In the light of "Recolonisation", the production of the "Basic Needs" will be discussed in this chapter to give a pointer to those who mean business. For the next 10 years, the average daily diet of a Bengalee under Re-colonisation scheme should be:—

Rice	...	...	...	8 ch.
Fish	...	...	...	2 "
Pulses	...	...	...	1½ "
Oil (other than fish oil)	...	...	...	½ "
Sugar	...	...	...	1 "
Vegetable	...	...	...	4 "
				17 chs.

Milk—8 ch. average for sick, invalids and children.

From the general adult diet, milk and milk-products, animal protein, eggs, etc., have been excluded. These will be included in the menu in the 2nd ten-year plan when about 75% of the lands will be under two crops and when the yield of the land will have been increased by 50%.

Calculating the needs of the province per year from the per capita "Basic Needs", it is found that 280,000,000 mds. of rice, 69,200,000 mds. of fish, 52,000,000 mds. of pulses, 52,000,000 mds. of oil seeds, 34,600,000 mds. of sugar, 91,250,000 mds. of milk and 138,000,000 mds. of vegetables will be necessary to feed the people. Basing all calculation on the present rate of production, the quantity of land necessary for producing all these will be 47,745,000 acres and this on **one** crop basis only. Deducting the acreage needs for fishery which is 11,530,000 acres, the acreage of cultivable lands should be 36,215,000 acres.

	Acres
From 1938 figures the area sown ...	24,728,100
Cultivable waste ...	5,753,822
Current fallows ...	4,683,548
<hr/>	
Total available lands ...	35,165,470
or approx. ...	35,165,500
Lands needed to feed Bengal ...	36,215,000
Deficit which should be made up	
from 2nd crop ...	1,049,500
	3% about

In other words, according to the scale and plan prescribed before, about 3% lands should be cultivated for 2nd crop **and this is for food alone**. Clothing, housing, sanitation, education and services must come from some other source. So **land must produce more to meet all these** at least for a long time to come.

With two crops we live ; with one and a half we subsist ; and with one crop, we die. This is the position of Bengal today, an absolutely desperate situation.

The implication of "two crop" from land are:—Quick cultivation, quick seeding, quick harvesting, quick irrigation

and quick storing (transportation)—that is **farming according to time table** ; which means **Complete Mechanisation**. The prescription is realistic though drastic, and the methods adopted should be equally drastic if necessary if we really mean to serve the prescription properly.

PRODUCTION

1. Rice—8 chs. per head per day.

For Entire population/year	...	280,000,000 mds.
Present production/year	...	249,000,000 „
Deficit	...	31,000,000 mds.
Acreage needs	...	21,525,000
Existing acreage	...	19,200,000
Deficit acreage	...	2,325,000

The difficulties that stand in the way of mechanised production of **Aman** rice are as follows:—

- (1) Ploughing in water with tractors.
- (2) Transplantation requiring much manual labour and hence delay.
- (3) Working in rains and in unhealthy conditions.
- (4) As the lands are uneven, for retention of water in paddy fields, small plots have to be made with **ails** after ploughing and before transplantation. This is costly, as much hand-work is necessary.
- (5) Small uneven plots make mechanical harvesting difficult.
- (6) The uneven plots increase transportation difficulties of harvested crop.
- (7) The time between harvesting of Aman paddy and the next crop is very short.

In finding the needs, the calculation has been based on the entire population instead of on the adult population only.

These difficulties can be avoided by great capital expenditure which is not possible now. For example—

There are tractors which can plough in mud and water. The whole field can be levelled and terraced so that irrigation water from one level may be allowed to run out to the next terrace and so on. Transplantors can lie, back up, on a car on wheels, say 20 in a row, with seedlings. The car being drawn by a tractor. 20 such transplantors will do the work of more than 250 men. By all these methods, which are not new to the world, Aman paddy lands could be ploughed, irrigated, transplanted and harvested. But all these require a whole lot of capital expenditure and unusual preliminary delay.

Therefore, for all high lands and lands from which water can be drained off, **Aus** paddy is the only solution.

The disadvantages of Aus paddy are—

- (1) Less production than **Aman**. This defect can be overcome by improving seeds, irrigation and manuring.
- (2) Less hay i.e. less fodder for cattle. This is more than off set by production of grass in lands lying fallow for about 3 months or more after Aus paddy is harvested.
- (3) In Bengal, the harvesting of Aus paddy takes place in the beginning of the rainy season. So, the crop after harvesting, has to be kept in shed. This naturally entails great cost.

The advantages are:—

- (1) The production of **Aus** paddy can be mechanised from ploughing to harvesting, including weeding which is also very troublesome in Aus paddy. All disadvantages are offset by mechanisation.
- (2) Aus paddy releases the land for 3 to 4 months during rains, during which time, part of the land may be kept under grass.

- (3) For every colony (Vakri town), of the 1550 acres under cultivation, the following apportionment has been made—

Based on Aman pady	Rice	..	1,000 acres	} 1,465 acres
	Oil seeds	..	255 ..	
	Pulses	..	210 ..	
	Sugarcane	..	40 ..	
	Vegetable	..	45 ..	
<hr/>				
				1,550 acres

In case of Aus paddy, all lands under rice, pulses and oilseeds i.e., 1465 acres, can be brought under Aus paddy, thus increasing the rice lands by about 50%.

- (4) Again, 1,000 acres out of 1,465 acres which are under Aus paddy, or a part of it could be cultivated for wheat or other winter crops.

All in all, taking everything into consideration, it can be said definitely that **by wholesale cultivation of Aus paddy, Bengal will be benefited by at least 40% by bringing more lands under paddy, releasing the Aman paddy lands for wheat, potatoes, pulses and oilseeds.**

A comparative crop planning for a colony for Aman and Aus are given below:—

Aman				Aus			
Rice lands cannot be used for Rabi crops				Rice lands can be used for Rabi crops			
Rice	..	..	1,000 acres	Aus Rice	..	..	1,400 acres
Pulses	..	..	210 ..	Cow peas	..	..	1,400 ..
Oil seeds	..	..	255 ..	Wheat	..	..	400 ..
Sugar cane	..	..	40 ..	Pulses	..	..	210 ..
Vegetables	..	..	45 ..	Oil seeds	..	..	255 ..
			<hr/>	Sugar cane	..	..	40 ..
			1,550 acres	Vegetables	..	..	45 ..
				Guinea grass	..	..	50 ..

By **Aus**, the land is released for wholesale green manuring, (which will also be useful as top cover) and for 400 acres of wheat and 50 acres of guinea grass for cattle fodder. When more attention will be paid to Aus paddy, better breeds of Aus by crossing will be produced, increasing the per acre yields to a great extent.

So by adopting Aus, great many problems are solved. The first is the problem of manuring, second is the problem of having a cereal other than rice in the general diet; and the third is that of milk supply. Under this crop planning, it may be possible to supply milk to the whole population of a colony. **Breeding of a draught resisting high yield variety of Aus will revolutionise crop planning of Bengal**, and what seems to be a desperate situation today will be solved most effectively in no time.

2. Fish—2 chs. per head per day should be increased to 3 chs. per head per day as soon as deep sea fishing is introduced.

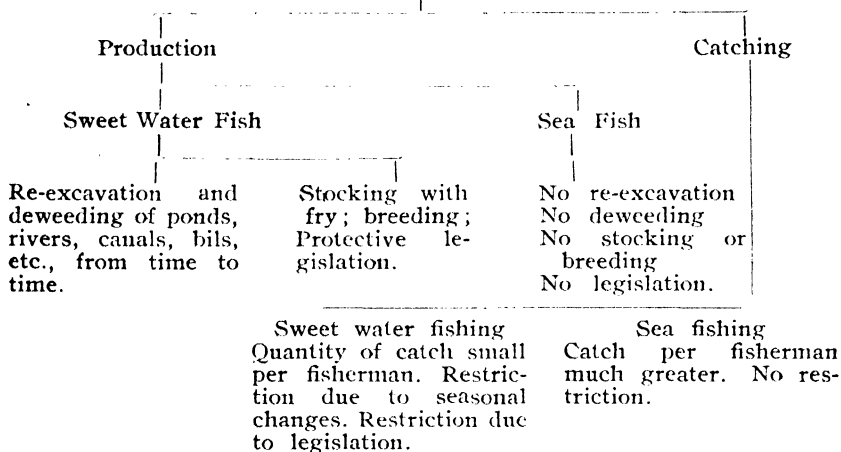
	Mds.		acres.
Annual needs ..	69,200,000	Acreage needs ..	11,530,000
Approx. pro- duction ..	30,000,000	Existing acreage	5,000,000
Deficit ..	39,200,000	Deficit ..	6,530,000

Next to Rice, Fish is the most important item of food for Bengal. In spite of the so-called pressure on the land **Bengal can live with Aus rice from the fields and deep sea fish from the Bay of Bengal for 100 years to come only if she takes to mechanisation.** When fish is such an important item of food, practically nothing has been done to survey the possibilities or to increase its production. In the absence of any reliable statistics about production of fish, and judging from quantity of fish taken by an average Bengali now-a-days, it seems that the production figure of 30,000,000 mds. per year should be taken with 50% discount.

At present, the sources of fish are:—

1. Ponds and Tanks.
2. Bils.
3. Rivers and canals or khals.
4. Estuaries.
5. Sea—Shallow waters.

Fish (from Inland Waters and from the Sea)



1. Ponds and Tanks

Under the Re-colonisation and Reconstruction schemes, the pond fishing will be negligible. Ponds were excavated for—ablution, irrigation and fishing. For ablution purposes, the tanks are going out of use for various reasons. For irrigation of fields under the present scheme of power farming, it will not even pay to install a 50,000 gallons pump in an ordinary pond. As regards fishing in ponds, it will not pay a fisherman to waste his energies over a small pond when he can make a fortune in river, estuarine and deep sea fishing with power to help him. Besides, ponds and ordinary fishing nets will stamp him with a badge of inferiority and perpetuate his inferiority complex for ever. We want to take him out of this inferiority complex and arm him with power.

So the almost silted up ponds should be allowed to silt up for future cultivation. It will even pay to help silting up the ponds by ingenious methods if possible.

For the transition period, between complete mechanisation and the present state, it may not be very unwise to help clearing some of the ponds for **sanitary reasons**. This will have at least some propaganda value, that the Government after all is doing something for the people, though an economist should like to see powered deep-sea fishing-boat built, instead of a tank desilted. From the stand point of neo-economics, the re-excavation of ponds for irrigation and fishery purposes is obsolete, and we do not like to see our money wasted in this brainless faddism any more when the same amount spent for deep sea fishing and dehydration plants can work miracles in no time.

2. Bils

Distribution of Fry for stocking inland waters, locating and creating breeding places, legislation for protection of fish in certain seasons—these are, as it were, the universally accepted propositions which every Government will see through. The most difficult problems connected with the bils in Bengal are—

- (a) The gradual **silting** up of the bils.
- (b) Obstruction to fishing created by **water hyacinth**.

Any plan regarding the bils should tackle these two problems with an eye to future fish supply for the Province.

(a) **Silting up of bils.**—Wherever the slit laden waters have an access, the bils are silting up. During the last 40 years, more than half the area of Chalan bil (the biggest bil in Bengal) has been silted up, and almost all of this silted up area is being cultivated. In the process of silting up, new water channels have been formed. From economists point of view, it will be wiser to allow the rest of the bil to silt up or even, if possible, help the process of silting up without impeding the natural drainage. Bengal wants more lands for her ever growing population. Inland waters, as source of supply of fish, is less important to Bengal, when she can have all her fish from the bay. For keeping the newly formed

channels open for drainage, power dredgers and excavators have to be requisitioned. As the District Boards keep the roads in repair, so they will, with the help of these dredgers and excavators, keep the natural drainage system of the district in working order. Small dredgers and excavators can be designed and made in the C-town workshops.

(b) **Water Hyacinth.**—The Government has come to the conclusion, that water hyacinth has to be removed from water physically, and cannot be killed with chemicals. There is a legislation, as we understand, to compel the villagers to remove the hyacinth from the inland waters. Legislation of this kind is the same, as whipping a dead horse. The devitalised and emaciated villager must do this, and, must do that. For every ill, the first idea that comes to the Government is, to find a solution through legislation—the panacea for all ills as they think. It is time that the Government become machine conscious and machine minded. It is deplorable, that in the middle of the 20th century our legislators and the Government cannot think of machines to solve their problems, and fall back upon religion and legislation—all commodities of pre-historic age—to save their hoodwinked soul, when the bodies of their benighted countrymen are being crushed under the deadweight of these two only creation of theirs.

What is to be done with the water-hyacinth?

Here is one of the many solutions. A highpowered motor boat with an attachment like a snow plough or a road grader will throw the hyacinth near the banks in water. Another boat, with a contrivance attached, will lift up the hyacinth, and throw them on the banks. It has to be found whether, the water hyacinth, can be packed in a retort to produce gas to run an engine for pumping water to the fields.

Bengal, nay India needs—

A bureau of Inventors.

A bureau of manufacturers and lastly,—

A financial syndicate.

Borrowed and hired men will never solve our problems. We must be able to scratch our brains effectively to produce what we want.

Now, what the Government of Bengal can do in this respect. They can get a few engines from the Disposal Department, and put a designer to design the boats and the contrivances, to try them and improve upon them. When these contrivances are brought to working order, they may have 50 sets of them built right here, and employ war returned truck drivers to work these machines.

The potentialities of the proposed Disposal Department are immense. With the fraction of the machines at their disposal, Bengal can be re-built in 5 years and a miracle wrought.

3. Rivers, Canals and Khals

What is true of Bils and water channels, is true of rivers, canals and khals. Gradual silting up and water hyacinth. These have been discussed before. Regular re-excavation and physical removal of hyacinth, are immediate solutions. Training of Bengal rivers is yet to come and no opinion can be staked on it at present.

- | | | |
|-----------------------|---|---|
| 4. Estuaries | } | These do not present any problem with regard to silting or deweeding. |
| 5. Shallow Sea | | |

Catching Fish

Situated as we are, suffering from acute shortage of food, it is important that we pay more attention to the immediate than to the remote and problematical. Bengal is suffering from shortage of rice. America produces plenty of rice by mechanisation. Aus paddy and wheat can be produced by ordinary mechanised means. The quickest way to get over the shortage would have been, to get priority, for say 600 sets of agricultural machineries, at a cost of about $1\frac{1}{2}$ crores of rupees, and produce about 9 million maunds of rice and wheat in the first year of famine. If we can import lakhs of

tanks and trucks for the killing department, we can reasonably expect to import a few hundreds of tractors for the life saving department. Instead of investing only $1\frac{1}{2}$ crores towards a permanent improvement of the food situation, we have thought it wise to set up a very tortuous organisation, more tortuous than the proverbial labyrinth, which instead of solving the food problem, is busy solving the problems created by its own tortuosity, and God knows whether it shall ever solve them. Three crores would have produced 18 million maunds of rice and wheat. Instead of thinking and working in a straight way, we have thought it wise to legislate, tax and open departments after departments, chasing the phantoms, and marching towards the mirage, leaving the real problem behind us, staring for a solution.

What is true of Rice is true of fish problem of Bengal. Crores are being proposed to be wasted on re-excavation of tanks and canals, on experimentations and path findings, on whether the neo-fish should be bred on tree tops or in rice fields, when the Bay of Bengal is in labour and want to deliver her millions to the starving population of Bengal. 200 deep sea fishing boats costing in the neighbourhood of 50 lakhs would have brought during these two years, at least 7 million mds. of fish.

For now, **catching fish is more important than committees and commissions to devise ways and means for breeding the fish.** There is plenty of fish in the bay. Re-excavation, canalisation, deweeding, etc., etc. can wait for the time being. All energies to be thrown on one, and only one **immediate** problem, which is the supply of fish to the starving population of Bengal. We do not call a man wise, who would rather starve for the time being, than to draw upon his huge bank deposit.

Again, the disposal department can come to our rescue. Their engines can be utilised in making motor boats. There is nothing much in boat building, specially these small ones. The parts can be fabricated all over,—and assembled on river banks. Calcutta can produce one such boat a day.

We are making a mountain of a mole hill by talking and posing big, writing, telegraphing, telephoning, ferrying officers of numberless denominations between Delhi and Calcutta, and after these numerous stunts, we find that the Government of Bengal has been awarded 3 fishing boats by the Central Government. Verily, the mountain was in labour. These boats are meant presumably for experimentation, that eternal preliminary experimentation, which probably will never cease till the last human body will roam in the wilderness of Bengal.

3. Pulses—1½ ch. per head per day.

	Mds.		Acres
Annual needs ..	52,000,000	Average needs ..	4,300,000
Approx. prod.	2,000,000	Existing acreage	230,000
Deficit ..	<u>50,000,000</u>		<u>4,070,000</u>

Bengal does not produce even 4% of her needs in pulses. This deficit can be made up by replacing Aman paddy by Aus paddy. If all the rice necessary for Bengal can be obtained from Aus paddy, then, all the lands excepting those under sugarcane, can be utilised for a second crop such as pulses, wheat, potatoes, oil seeds, etc. Though provision has been made in the plan for cultivation of pulses, it is to be determined whether the average Bengali stomach, which has deteriorated during the last 30 years, is able to digest all pulses except Musuree and Moog. If the Bengalees cannot digest pulses, it is to be found out whether dal should not be replaced by more fish. In that case, all dal lands can be utilised for production of oil seeds for export or fodder for cattle, increasing thereby the per capita production of milk.

The mechanised harvesting of pulses except arahar present great difficulty. Arahar and jute can be harvested in the same way. Harvesters for kalai, moog, etc. should be designed and manufactured.

4. Oil— $\frac{1}{2}$ ch. per head per day.

	Mds.		Acres
Annual needs ..	17,000,000	Acreage needs ..	5,200,000
Approx. prod.	4,000,000	Existing acreage	1,200,000
	<hr/>		<hr/>
Deficit ..	13,000,000	Deficit ..	4,000,000
	<hr/>		<hr/>

Bengal produces about 25% of her mustard oil needs. Mustard oil is used for massaging and cooking. The food value of mustard oil is doubtful and it is better that it should be replaced by til oil and cocoanut oil. Til can be produced both in alluvial (kath til) and laterite (krishna til) soils and its production and harvesting are easy. Mechanical thrashing presents difficulties but these can be overcome. Production of cocoanut and cocoanut oil can be increased without encroachment on cultivable lands.

5. Sugar—1 ch. per head per day.

	Mds.		Acres
Annual needs ..	34,600,000	Acreage needs ..	770,000
Approx. prod.	13,041,000	Existing acres ..	521,000
	<hr/>		<hr/>
Deficit ..	21,559,000	Deficit ..	249,000
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The production of sugarcane has been mechanised. Harvesting and thrashing have to be done by manual labour and there is no way out of it for the present. In the scheme of Recolonisation, every C-town will have a sugar mill of 50 ton capacity. All the items of the mill have to be manufactured in Calcutta otherwise, cost of imported mill will be prohibitive. There is no dearth of manufacturers in Bengal, but the designers are few. Dr. Kartick Chandra Bose has made most of the parts of his mill in his workshop. From the point of view of capital industry, it was a splendid achievement. In case petrols become difficult to get, it may be necessary to install distilleries for alcohol which may be used as fuel in place of petrol. Dr. Bose has also manufactured his distillery machineries in his own workshop. So,

manufacturing of a 50 ton mill and distillery right in Calcutta, will not present any difficulty.

6. Vegetables—4 ch. per head per day.

	Mds.		Acres
Annual needs	138,000,000	Acreage needs ..	920,000
Approx. prod.	Unassessed	Existing acreage	Unassessed

In the scheme of recolonisation, all green vegetables excepting potatoes are to be produced on homestead lands. Potatoes are to be produced on large scale in the fields. Potato cultivation is thoroughly systematised and mechanised and it would not be difficult to produce potatoes on large scale. Keeping of potatoes is difficult. In the first 10-year plan, no provision has been made for cold storage. Provision however has been made for dehydration. It will be wise to dehydrate all potatoes and keep them for consumption during rains. Many other vegetables have also to be dehydrated and kept for the rainy season. Bengal suffers greatly from lack of vegetables during rains, and if productions can be made cheaply, and there be excess of production, it will be easy to market the dehydrated product at a profit.

7. Milk—For invalids and children—8 ch. per head per day.

None for adults.

Annual needs ...	...	91,250,000 mds.
do production ,	...	12,500,000 ..
	Deficit ...	78,750,000 mds.

Number of cows and she-buffaloes in Bengal is 8,526,600. Most of these are useless as milk cattle. From the average per capita holding of land in Bengal, it is not possible to keep pasture grounds for cattle, nor is it possible to have separate crop for cattle fodder. Cattles have to be fed on bye-products—hays from paddy and wheat, husks from paddy, wheat and dal, oil cakes from seeds, sugarcane tops, tops of leguminous crops which are meant for green manuring, etc.

Under the Aman rice scheme, the fodder produced as bye-products of main crops cannot feed more than 10 million

cattle. If there are 10 million heads, the milch cows and buffaloes will be about $2\frac{1}{2}$ millions. Taking the average yield at 4 seers per day, and supplying $\frac{1}{2}$ seers per head per day, a population of 20 million can be served with milk. This is about the percentage of non-adults, sick and invalids. Thus, under the present Aman scheme of crop management, no more than one-third of the population of Bengal will get milk.

If quick results have to be obtained, the only solution of bringing a better breed of cattle will be by **insemination**. Starting with selected good cows, say 2 millions, in 5 years we can get all the cows we need for which fodder is available. If 2 millions of cows are to be selected for breeding, the problem arises as to what is to be done with the rest 6,526,600 cows and she-buffaloes. To kill them would be unreligious, to let them die a natural death or to deport or export them, would be uneconomical ; to let them die of hunger will be unethical. From the economists' point of view, the meat value of $6\frac{1}{2}$ millions would be at least 20 million maunds, and it could go a long way to solve the meat problem of Bengal for sometime to come.

Thus on the basis of **Aman rice**, only one-third of the population can be supplied with $\frac{1}{2}$ seer milk per head per day under the present scheme of colonisation.

On the basis of **Aus rice**, the hay from paddy and wheat ; tops from sugarcane and cowpeas ; pasturing from guinea grass ; husks from paddy, wheat and pulses and also oil cakes, will maintain on the average about 1,000 cattle per colony or 20 million cattle in Bengal. In that case, milk can be supplied to the children, **sick and invalid at 10 chs.** per head per day, and to others at **6 chs. per day.**

Under the **Aus scheme**, more lands are available for 2nd crop than already provided for in the scheme. 200 to 250 acres of cotton can be cultivated. This will yield cotton seed cakes for cattle and also vegetable ghee (by hydrogenation) for the population.

VI. CLOTHING

What should be the dress of the Bengalees? Bengal does not produce cotton except some short staple ones in Tippera, Chittagong and Chittagong Hill Tracts. It has been found that long staple cotton can be produced practically all over. These have been tried at the Government Agricultural Farm at Dacca, at the Bagda Farm and in the Chittagong hills. In every case the result was good. The biggest problem would be to find lands for cotton cultivation.

On the other hand, Bengal produces jute. Jute can be softened and mixed with cotton and wool to produce good shirtings, coatings, pantings, etc. But in that case, dhoti must go and yield place to trousers or pajamas. The field and factory man will wear shorts and shirts, and the soft-handed will wear pajamas or trousers. Agricultural economy demands this new social outlook, and sooner or later Bengal has to yield to this economic demand.

To supply **30 yds.** of cloth per head to the Vakris in V and C towns, each with a 3,000 population, each town must have at least 220 acres of land under cotton. It is better to have 250 acres. Under **Aman** crop planning, this land is unavailable. Under **Aus** crop planning, 250 acres or more are available for cotton as second crop.

So there are two alternatives before us—

- (1) Whether to go for Aman paddy and make jute the basis of clothing, or
- (2) To go for Aus paddy and make cotton the basis of clothing.

For the present,, the consensus of opinion will be in favour of cotton basis.

This implies indirectly that, for agricultural economy, Bengal henceforth will have **Aus** instead of **Aman** for her main cereal.

On **Aus** basis, every colony will bring under cultivation 250 acres of cotton so a group of nine Vakri towns will have $9 \times 250 = 2,250$ acres under cotton. Cotton cultivation has been thoroughly mechanised in U. S. A. So, all that is necessary, is a straight imitation.

As the cotton mills are to be centralised in the C-towns, **each C-town cotton mill will have 3,000 spindles and 80 looms.**

On a provincial scale—the total lands required to supply cotton for a population of 61 millions at 30 yds. per head will be **5,000,000** acres.

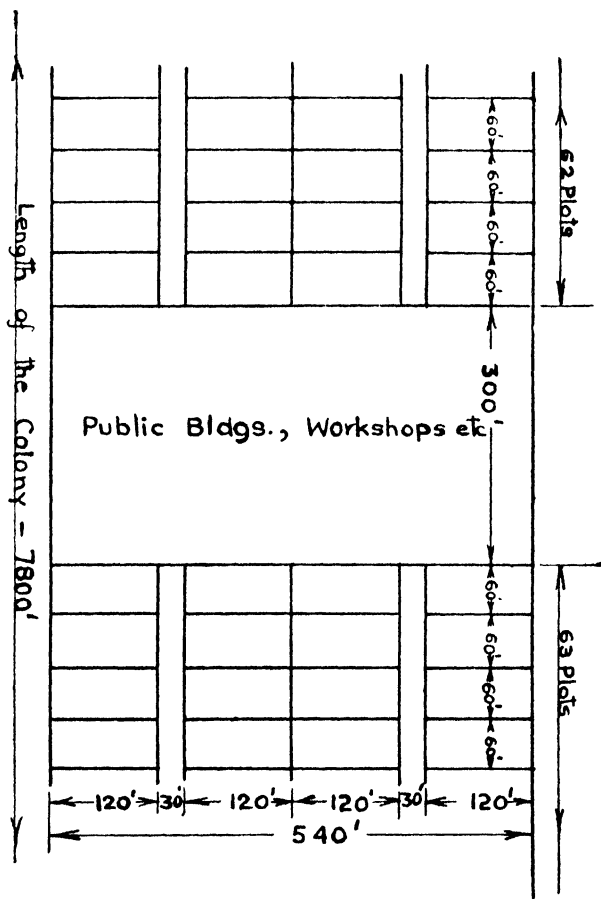
The hill tracts of Tipperah, Chittagong and Chittagong hills may be brought under cotton cultivation, and will cover an approximate area of from 800,000 to one million acres. Thus roughly, in the plains of Bengal about 4 million acres should be brought under cotton. By deforestation of the hill tracts (if thought fit) more lands can be made available for cotton.

The cotton industry of Bengal can be summarised thus—

Area to be brought under cultivation ...	5 million.
Spindles necessary ...	6,400,000
Looms necessary ...	160,000
Cloth necessary at 30 yds. per head ...	1,830 million yds.

VII. HOUSING

One-sixth of an acre (10 kathas) has to be allotted for each family as homestead land in a plot of $60' \times 120'$. In a colony the total area necessary for this will thus be 83 acres. These plots will be continuous on both sides of the roads as shown. Buildings for all means of production, workshops,

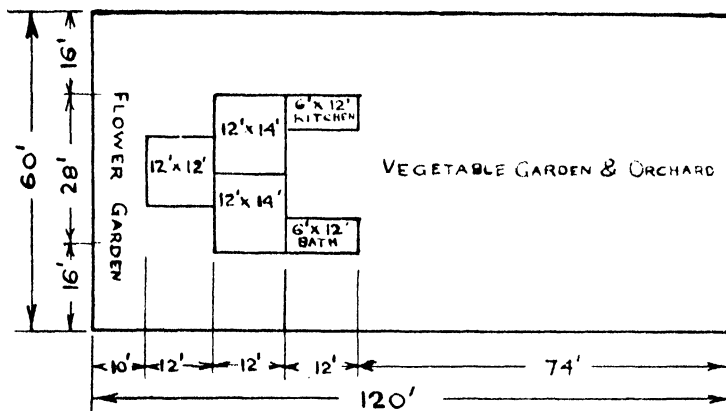


HOMESTEAD PLOT FOR A FAMILY

administration buildings, dispensary, granaries, etc., will be located in the centre of the town in a plot of $300' \times 540'$. The total length of the colony thus will be 7,800 ft., i.e.

about $1\frac{1}{2}$ miles and the breadth will be 540 ft. or less than a furlong.

In a plot of $60' \times 120'$, the house itself will occupy $36' \times 28'$. In front of a house in a plot of $10' \times 60'$ there will be flower garden, etc. In the backyard, in a plot of $74' \times 60'$ there will be vegetable and fruit gardens.



VAKRI COLONY PLAN

The plan of a Vakri house for 6 members is given above. There will be two housing plans—one for V-towns and another for C-towns.

The V-town houses will be made as follows:—

Clay walls with seasoned bamboo reinforcements. Clay tile roofings. Seasoned bamboo frame. Rammed mud floor covered with sand and asphalt. Walls white washed with lime inside and cement washed outside.

In C-towns, brick plinth, cement floors and flat ceiling below roofings. For extra work the members will pay.

The machineries necessary for quick building of houses are:—

Pug mills, clay throwers, trench diggers, wood working machineries on wheels, pumps and oil engines.

Furniture to be made of local wood ; lavatory fitments of brass sheets ; bore hole latrines in V-towns and septic tanks for C-towns (for individual house) are to be provided

for. Kitchen utensils to be made of cast iron and brass. Aluminium utensils have proved a failure in Bengali homes as they do not stand daily rubbing with ashes for cleaning, and they are not repairable.

VIII. SANITATION, REST AND RECUPERATION.

When the fundamentals of the plan are accepted, and the foundation is laid according to plan, there will be no disagreement, we believe, on the detailed working out of plans for sanitation, rest and recuperation. So, only the **special features** are discussed below:—

According to Bengal Plan, under sanitation will come

- (1) Medical help—preventive, **recuperative** and curative ;
- (2) Water supply ;
- (3) Conservancy and all other items pertaining to preservation of health.

As 50% of the people are devitalised, it will be necessary for the Government of Bengal to manufacture on a large scale the **recuperative drugs** such as glucose, liver extracts, etc. Instead of depending upon general food and rest, it will be the business of the Vakri township to administer these recuperative medicines to its devitalised citizens and help them to come up to the rank of normal men.

If Bengal has to be saved, all means of perpetuating the Caste System must be abolished.

Conservancy is one of those means by which the Caste System is perpetuated. To make a man to work in dirt and filth by stamping him with a seal of inferiority by calling him a Methar or a Dom ; and then in a fit of arrogant emotionalism to try to elevate his status just by another label of Harijan or Krishnajan, which are equally bad and may be blacker than the first—will be the height of foolishness and insincerity which the present world will not brook for

a day. Conservancy system has to be overhauled, borehole latrines or septic tanks for every family, the latrines being scientifically cleaned by users ; arrangements for burying house sweepings by residents themselves, arrangements to sweep and clean roads by street sweepers—these will eliminate the most unthankful task of a society to maintain a sweeper caste eternally chained to the most dirty and filthiest things in the world. Let science and machine help us to elevate the backward the scheduled and the downtrodden. The conservancy system of Vakri towns is designed with an eye to this most ignoble of human factors.

According to the Vakri Code—“**Every man a soldier and every woman a nurse**”. With complete mechanisation of agriculture and means of production, much human energy will be released for services. Every woman will be required to take intensive training in nursing and midwifery. Every woman by turn will be required to serve the township state.

Every V-town of 3,000 will maintain a dispensary and an L.M.F. Doctor who will have to get the training necessary for a health officer and a Sanitary Engineer. He must be thoroughly acquainted with recuperative medicines and their application.

IX. EDUCATION.

The minimum standard of education to be achieved in Vakri towns will be up to middle school in three years.

To give effect to interchangeable occupation, every man has to be a teacher and every teacher has to be a student, and there should be one teacher for every five students.

Every man and woman has to be drilled for discipline. System in home and life has to be brought by special training.

Physical exercise will be compulsory for all—both for men and women.

Every man and woman should be made machine conscious. The details are unnecessary.

X. TIME TABLE.

All C-towns to be started first starting from a place nearest to collieries in Burdwan district. 2,200 C-towns will be needed for Bengal of which 380 for Burdwan division, C-towns will be 6 miles apart lengthwise and $4\frac{1}{2}$ miles apart breadthwise. 48 such C-towns to be started in 1946.

1945 (Oct.-Dec.)—acquisition of land and survey.

1946 (Jan.-March)—Arrangement for irrigation ; building mess houses for workers ; sheds for harvested crop and thrashing sheds ; granery ; workshop building.

1946 (April-May)—Ploughing and sowing Aus paddy ; installation of workshop machineries and power plant.

1946 (June-Aug.)—Running workshop making machineries for other C-towns. Harvesting and thrashing and storing paddy. Ploughing for cowpeas and sowing the same.

1946 (Sept.-Oct.)—Turning cowpeas under ; preparing soil for winter crops and sowing wheat, oil seeds, planting sugarcanes, potatoes, cotton, etc.

1946 (Nov.-Dec.)—Starting erection of factory houses. Installing machineries, starting building houses for members. 500 houses to be completed by March, 1947 and members to take possession of houses by April, 1947.

1947 (March)—Harvesting winter crops ; preparing field for Aus paddy.

Forty-eight such C-towns should be able to produce machineries (excepting the machine tools, spinning machines and sugar mills) for $8 \times 48 = 384$ more C-towns and also fabricate all structural steel for their workshops, graneries, crop shed, etc.

The order of work to be—

Irrigation→Cultivation→Power plant →Workshop
→Factories→Living houses→Sugar mill.

Food must be produced before the Vakris take possession of the town.

The acquisition of land and survey of the next 384 C-towns to be completed by December, 1946 and work for colonies to begin in 1947, January, starting with arrangements for irrigation. The Vakris to take possession of quarters in March, 1948.

Thus, if intense pressure is kept up, as was done in case of war, the whole of Burdwan division may be recolonised in course of two years.

The C-town recolonisation scheme may be completed in 5 years.

As the C-towns grow up at every 6 miles, it will be the duty of the C-town Vakris to bring adjoining lands around the C-towns under power farming, by setting up Co-operative Societies, renting machineries from C-towns, etc. In the beginning, the distribution of crop in V-towns may, if necessary, be according to ownership of lands. The landless and poor may have to be given work in the farms and in the shops to accommodate them. These methods will help to form future V-towns. The power cultivation and production of two crops will help the would be V-town Vakris a great deal. In fact, **the C-town Vakris will be pioneers who will have to work hard for the upliftment of their neighbours.**

During the growth of the C-towns, the V-towns will grow around them, and by the time the first ten years are completed practically all C-towns will have been formed. At least, the method of cultivation will be changed from the most primitive to the most modern.

XI. THE NEEDS—MEN; MONEY & MACHINERY.

The needs of Bengal in men, money and machineries are:—

A. MACHINERIES

1. POWER PLANTS

(a) **Power plants**—Capacity **one million** k.w. for West and Central Bengal to be installed in colliery districts and transmitted at high voltage.

(b) **Power plants**—Hydroelectric to be installed in the Himalayas for North Bengal and parts of East Bengal, capacity **one million** k.w.

(c) Several central power stations to be run by gas engines, crude oil engines, etc., for parts of Dacca Division and parts of Chittagong Division. Total capacity **half million** k.w.

Therefore the **total for Bengal would be 2½ million k.ws.**

2. AGRICULTURAL MACHINERIES

1.	Tractors (50 h.p. each) ...	40,000
2.	Disc plows ...	20,000
3.	Mold board plows ...	20,000
4.	Disc harrows ...	20,000
5.	Spike tooth ...	20,000
6.	Harvester ...	40,000
7.	Winnoer ...	40,000
8.	Thrasher ...	20,000
9.	Trucks (3 tons) ...	60,000
10.	Trailors for tractors ...	40,000
11.	18" dia. tubewells ...	60,000
12.	Turbine pumps for tube-wells ...	60,000
13.	15 h.p. motor for pumps	60,000
14.	Ditchers ...	10,000
15.	Cultipackers ...	40,000
16.	Road graders ...	10,000

3. FOR WORKSHOPS (Machine Tools)

(A) Wood Shop—

1. Lathes	...	...	2,000
2. Drills	...	...	4,000
3. Circular saws	...	...	3,000
4. Band saws	...	...	2,000
5. Tenoning machine	...	...	2,000
6. Mortising machine	...	...	2,000
7. Planing machine	...	...	2,000

(B) Foundry—

1. Cupolas	...	...
2. Blowers	...	...	2,000
3. Accessories	...	...	2,000

(C) Forge Shop—

1. Blowers	...	...	2,000
2. Anvils	...	...	2,000
3. Vise	...	...	2,000
4. Sets of tools	...	...	2,000

(D) Machine Shop—

1. Lathes	...	...	8,000
2. Drills	...	...	6,000
3. Saws	...	...	2,000
4. Planers	...	...	2,000
5. Milling	...	...	2,000
6. Shaping	...	...	2,000
7. Grinding and	}		4,000
8. Polishing			
9. Power presses	...	...	2,000
10. Punch and shear	...	...	2,000
11. Gear cutting	...	...	500
12. Shaftings	...	...	2,00,000 ft.
13. Pulleys	...	...	44,000 pcs.
14. Belting	...	...	7,920,000 ft.

(E) Welding Machines—

1. Gas welding	...	...	2,000 sets.
2. Electric	...	...	500 „

4. INDUSTRIAL MACHINES

(A) Production of Food—

1. Rice hullers	...	...	10,000
2. Oil ghanies	...	...	6,000 sets.
3. Oil expellers	...	...	2,000
4. Wheat grinders	...	...	4,000 sets.
5. Dal grinders	...	...	2,000 „
6. Dehydrating plants	...	...	2,000 „
7. 50 ton sugar mills	...	...	2,000 „

(B) Production of Wears—

1. Complete cotton mills with 3,000 spindles and 80 looms	2,000 sets.
2. Knitting machines	4,000 „
3. Complete tannery to tan 1,000 cow hides a year	2,000 „
4. Complete shoe factory to turn out 24,000 pairs of shoes per year	2,000 „
5. Complete rubber shoe fac- tories to turn out 30,000 pairs of shoes per year	2,000 „

(C) For Dairy—

1. Silo cutter for cutting 500 mds. of fodder per day	25,000
2. Oil cake disintegrator	20,000
3. Milking machines for milk- ing 300 milch cows per day	20,000
4. Milk pail to hold half md. of milk in each	1,000,000

(D) For Laundry—

1. Washers to wash 1,200 pcs. of cloth per day	20,000 sets.
2. Rinsing centrifugals	20,000
3. Driers	20,000
4. Ironers	20,000

5. FOR SERVICES**(A) For Water Supply—**

1. Lift & force power' pumps	20,000
2. Overhead tanks, 6,000 gallons each	20,000
3. Stagings—40 ft. high ..	20,000
4. Pipes (a) for mains	480,000,000 ft.
(b) for house service	500,000,000 ft.
5. Taps and fittings	60,000,000

(B) Lavatory—

1. Squatting bowls and set ...	10,000,000
2. Wash basins	10,000,000

(C) For Printing—

1. F. scap size treddle presses	2,000
2. Types & other accessories for the same	6,000 mds.

6. POWER (Motors)

1.	60 H.P.	...	...	2,000
2.	50 "	...	...	2,000
3.	10 "	...	...	20,000
4.	10 "	...	...	20,000
5.	50 "	...	...	2,000

7. FISHING

1.	Deep sea fishing boats with 50 to 60 h.p. complete with nets ...	...	3,340
2.	Mother boats—powered & fitted with refrigerating plants to carry the fish from the sea to the port for dehydration, etc. 1,000 tons each ...	...	10

8. HOUSING

1.	Pug mills ...	...	4,800
2.	Clay throwers (complete)	...	7,200
3.	Wood working machineries field set on 4 wheel carts fitted with engine	...	2,400
4.	Crude oil engines for field work—15 h.p. ...	...	4,800

9. CONSERVANCY

1.	Street sweepers (machine)	...	4,000
2.	Hauling carts ...	...	4,000
3.	Watering carts ...	...	4,000

10. IRRIGATION (For C-towns only)

1.	Tubewell boring sets for 24" casing & 600' depth	...	50 sets.
2.	24" dia. casing pipes ...	...	15,000 ft.
3.	18" dia. T. W. pipes ...	...	600,000 ft.
4.	18" dia. strainers ...	...	120,000 ft.
5.	Turbine pumps ...	...	2,000
6.	15 to 20 h.p. motors ...	...	2,000
7.	Centrifugal pumps for canal or river irrigation from 1 to 2 lac gallons/hr. ...	...	2,000
8.	Oil engines and motors for same ...	...	2,000

B. MONEY (Finance)

Finance has been discussed under recolonisation (pages 12-15) and also under conclusion (page 74). For every C-town (as these are to be started first) capital will be required for the following:—

1. Lands	...	Rs. 2,00,000	credit
2. Agricultural machineries	..	50,000	credit
3. Industrial equipments	...	1,50,000	part credit
4. House & house fittings	..	1,00,000	cash

It may roughly be taken that out of these 5,00,000/- about 50% will be cash and the balance can be had on credit. Lands may be had on the issue of Co-operative bonds. Most of the agricultural machineries may be had from the Disposal Department, and part of the Industrial Equipment for ex. the machine tools, the engines etc. may also be had from the same department.

The total amount that will be needed for 2,000 C-towns will be $2,000 \times 5 \text{ lacs} = 100 \text{ crores}$, of which 50% or **50 crores** will be needed in cash and the balance on credit.

The **net income** of the colony from Agriculture and Industry is expected to be Rs. 52,000/- after

(a) Feeding all of its members (3,000) according to dietetic menu.

(b) Paying interest at 3% and depreciation at 10%.

(c) Paying for services and sanitation, education, etc. at Rs. 13/5/- per head per year.

If the organisation has borrowing facilities from the town Co-operative Bank, the whole of this sum can be paid towards the debt of the colony and the debt liquidated in 7 years' time.

It is expected that by bringing more lands under 2nd crop, the income can be so increased and that repayment of all loans can be effected in course of 5 years.

C. MEN

For each C-towns colony, the following personnel will be required:—

1. Productive Dept. —(Technical personnel) ...			54
(a) Agriculture—			
Tractor men ...	...	3	
Truck drivers ...	...	2	(these are inter- changeable with the tractor drivers)
Irrigation ...	...	1	
Dairy ...	...	1	
	—		...
			7
(b) Industry (Food)—			
Rice mill ...	...	1	
Oil mill ...	...	1	
Delydrating ...	...	1	
Sugar mill ...	...	5	
	—		...
			8
(c) Industry (wears)—			
Cotton mills ...	...	2	
Tannery ...	...	4	
	—		...
			6
(d) Industry (workshop)—			
Woodshop ...	...	2	
Machine shop ...	...	8	
Welding ...	...	1	
	—		...
			11
(e) Industry (Power)—			
Electricians ...	...	3	
Engine and boiler men	...	6	
	—		...
			9
2. Services (Technical personnel)—			
(a) Washing ...	...	2	
(b) Water supply ...	...	1	
(c) Printing press ...	...	2	
(d) Boring ...	...	3	
	—		
			...
			8
3. Medical —			
(a) Physcn. & Surgn. (M.B.)	...	1	
(b) Assistant (L.M.F.)	...	1	
(c) Compounder ...	...	1	
(d) Nurse ...	...	2	
	—		...
			5

The total number of technical personnel per C-town Colony will be 54. Two years' training would be sufficient for an average technical man. With four apprentices for one technician, about 200 technical men can be produced in course of two years per colony or **100 per colony** per year. That is, every year, one colony will train technicians for 2 colonies.

The starting is made with 48 colonies (page 16). 48 colonies will need approx. $48 \times 50 = 2,400$ technicians to start with. These are available immediately.

Mobilising the discharged tank, truck and car drivers from the military and the discharged truck drivers from semi-military transportation companies, we can expect about 20,000 men who, with two weeks' training, would be able to handle all types of agricultural machineries. At the rate of 7 men for each C-town colony, about 3,000 C-towns (or 2,000 C-towns and 1,000 V-towns) can be started. These men can be trained to other types of work. So, if money be forthcoming, there will not be any dearth of technical personnel. The graduates of Sibpore and Jadavpur Colleges can easily supply all the top men necessary.

XII. WHAT OTHERS SAY

Prof. Dr. Radhakamal Mukherjee, M.A., Ph.D.

According to the learned professor, troubles in the world are due to—

1. Maldistribution of population in the world. The remedy lies, he says, in migration from over-populated parts and colonisation in thinly populated areas.

2. Uneven distribution of world's natural resources.

We have only two standards by which we can judge the value of any recommendation and these are—

- (a) Whether the recommendations are **practical** under the present circumstances.
- (b) Whether these can be applied **immediately** to give relief.

1. Maldistribution of Population

The distribution in our case may be of either

- (a) of international nature or
- (b) of interprovincial nature.

Bengal's density of population is 740 per square mile while that of India is 214. If we want to bring the density of Bengal's population to that of India level, at least 40 millions of Bengal's population have to be removed elsewhere, say to Australia, Africa, U. S. A., Canada, or South America. Migration is possible either as (1) conquerers or as (2) immigrants. We have to arm these famished people of Bengal at least with a tommygun and sail for conquering any of these countries or we may go there to settle as immigrants. We know our fate in South Africa and in other British colonies. U. S. A. after 100 years has given the Chinese the rights of citizenship. We cannot sell our labour because we have no labour to sell as we are starved and famished. In these days of highest remuneration only last year $3\frac{1}{2}$ millions of Bengal died of hunger and as they could

not sell their labour for a living. Who are there in the world today who, out of philanthropic motive will take us away from Bengal and settle us in their country?

Besides, immigrants have very little value in the days of **mechanisation**. **Machine is the cheapest labour** and so immigration is obsolete from practical view point. So much for international immigration.

As regards interprovincial immigration, we in Bengal resent the Behari labour who practically do all our work. A few Bengalees who recently settled in the jungles of Assam are unwanted there. To think that 40 millions of Bengal can be migrated anywhere in India is preposterous.

Therefore the conclusion is that the idea of migration from Bengal—either international or interprovincial is not practical and not of immediate value. The Jews, the richest community in the world, have not yet found a national home. The idea of self-determination of nations and post-war immigration are self-contradictory.

2. Distribution of Natural Resources

Nations have fought two biggest world wars in the 20th century to achieve this end partially, and they are nowhere now. Though wars have not given direct solution to this problem, the bye-products of these wars have given a better and a more scientific solution. The theory of **substitutes** and **synthetic products** are being pushed to logical conclusion. The Allies were going to suffer rubber starvation. Synthetic rubber, a produce of human brain, appeared and saved the situation, Germany was going to suffer from petrol starvation. Alcohol with peroxides and synthetic petrol are solving her problems. When the out-of-date economists are thinking in terms of natural products, the modern scientists are marching with substitutes, synthetics and plastics. In the fight between economists and scientists, the scientists have won unknowingly and unwittingly. Australian wheat sold cheaper in the land of **Sujalang, Soofalang**. American wheat and fruits are selling cheaper than our own wheat and

fruits. International Harvester and others of their trade have made Malthus's dictum innocuous. In the light of these, and in these days of substitutes, synthetics and plastics, the idea of distribution of international resources is obsolete and will find a convenient death after this war is over and when findings of nations in war will be put to order. Let us scratch our brain efficiently, and we find a solution for all our problems of this kind.

THE BOMBAY PLAN

The assumptions underlying the Bombay Plan are—

1. A **Political** assumption that there should be a National Government as condition precedent.
2. An **Economic** assumption that there should be fiscal autonomy.
3. A **Psycho-physiological** assumption that higher the standard of living the better the manhood in our country.
4. An **Industrial** assumption that more the industries the better the manhood.

1. Political Assumption

Can England afford to give India any kind of National Government? Even victory for the Allies will be a real defeat for England. Sandwiched between ideological pressure of Russia and economic pressure of America, and deserted by her kith and kin in the colonies, England will have no other place to fall back upon than on India. She may afford to give a show of National Government to British India, but then she has to tighten her grips on the Indian States to make up for the loss. Self-preservation works better than philanthropic ideas. If England wants to live, she must live as an Imperial power exploiting weaker nations in Asia and in parts of Africa. Her industries are disturbed; her international investments gone. She is the most indebted nation in the world today. If every country becomes more or less self-sufficient in industries, which country then she will exploit to pay up her debts, to recu-

perate and maintain her standard of living and to create surplus for emergencies? India is the only country which can save her. From Englishman's standpoint it is the sacred duty of every Englishman to cling fast to India, because with India he lives and without India he dies. When such is our position, can we expect anything of substantial nature from England? What then is the present solution? **To create surplus blood by a system in which England's economy is not affected and donate the surplus blood for England's maintenance and recuperation for some years to come.** The Bombay political plan is unrealistic in this regard. Is it possible to formulate a plan without this political assumption? The reply is a definite **yes**.

2. An Economic Assumption

The three main sources of finance in the plan are— (1) Sterling securities, (2) Savings and (3) Created money, The economic assumption is that, England should give us immediate **fiscal autonomy** and in that feat of generosity she will pay us the short time sterling debt to enable us to spend it according to our convenience. The still further dangerous assumption is that during the period of **transition** between the assumption of power by the National Government and the end of first 15 years of its rule, the credit (both internal and external and specially the internal) of the Government will be such as to command the internal borrowings to the tune of Rs. 7,400 crores and external borrowings of Rs. 700 crores. Let these be examined in the light of the realities.

Sterling Balance—As the balance was mounting up from year to year, and as the war situation was getting favourable, there was a great tendency to repudiate almost everything promised. The debt, the rights of the minorities and even the Atlantic Charter are on the repudiation anvil to be thinned by the hammer of imperialism. There is already a cry that sterling debts have been incurred under unusual

circumstances of inflation and therefore should be decreased by 50%; that the war with Japan is India's war and that Indian exchequer should bear a very substantial proportion of the expenses ;that the balance which remains after deductions for inflation and war expenses, should be paid by commodities or in any other way as the debtor chooses in long term instalments. We anticipate that when the payment will be agreed upon finally, the exchange ratio will be manipulated in favour of the debtor. In our enthusiasm we forget the realities of the world that a weak creditor, however armed with ethical laws, has no chance before a powerful debtor who can manipulate ethics to suit his conditions and convince the world about the same. The fate of the sterling balance is gradual emaciation from aenemia and final death.

The credit--We have seen in national and international affairs that unless a Government is stabilised politically and militarily, it cannot command internal or external credit. Like weak men, money has a tendency to fly away from danger zone to places of safety, and it will not startle any if, during the first turmoil of transition, much of our capital flows to other countries, nay even to England. There is a lot of difference between the patriotism of a capitalist and that of a revolutionist. Bombay Plan has assumed that transition will be orderly, that no other political group will disturb the tranquillity of the orderly execution of the plan, and if there be any trouble, England will protect the Government in power--England which has nothing to gain, and all to lose from this marvellous business transaction of philanthropy and self-abnegation. My admiration flows to the planners who have taken such initiative; and when I criticise the plan, I do it with a spirit of service to the motherland and with a sense of deep respect to the workers who have brought the plan to the light of the day. Unlike propagandists, businessmen are expected to face stern facts of life, and I request the illustrious planners to record the following stern facts:--

(1) England cannot afford to leave India or give her

any sort of real National Government or fiscal autonomy at present.

- (2) No economic reconstruction is possible without giving England a share of the benefit both—capital and recurring.
- (3) The National Government of India, if it is truly national cannot expect much internal finance or foreign capital during the **period of transition** so long the government is not definitely stabilised politically, economically and militarily. It must have ability to suppress internal revolution and defend against external aggression.

Taking these factors into consideration, the total finance expected will be reduced to less than one-fifth (or say, 3,000 crores) of that required by the plan.

So much about **finance**. There are many items of expenditure about which I shall have a chance to discuss in my book on Industrial Planning. A word of caution about one item is necessary now and that item is **Communication**. If agricultural and industrial economy are properly planned, there will be no need of long distance haulage for any major item of consumable goods. It will not be necessary to feed Bengal by the Punjab, Australia or Canada. Neither it will be necessary for cotton to travel 1,600 miles by railway from Bombay to Naraingunge in Dacca District. The wastage in haulage is startling. When details will be worked out, it may be found that no further extension of Railways will be necessary for the present.

Roads are necessary for short haulage and for inter-provincial and inter-district transportation. By re-distribution of men and lands on the Vakri town system as advocated in my plan, every bit of land will be under one or other of the townships. It will be the duty of every township to open roads and maintain them according to plan. This will reduce the capital expenditure on this item by more than 70%.

3. A Psycho-Physiological Assumption

The Bombay Plan has assumed, though not in so many words, that higher the standard of life, the better the manhood. It has all throughout stressed on standards and higher standards of living for betterment of a nation. This assumption may be partially true in cases where (1) the body and mind react favourably to betterment stimuli ; and (2) where every man and woman, by virtue of political, economic, social or religious systems, has to pass through the ordeals of sterner things of life. Last year during famine, more people died in Calcutta by eating **khichuri** than by actual starvation. They could not digest the food offered to them so philanthropically. They were fit cases to be sent to Nursing homes for recuperation. They did not respond to food stimulus. Again, there was a jute boom in Bengal for a few years (between 1924-30). As a result the following happened—(1) Behari coolies were imported to do the cultivators' work and the dignity of labour disappeared. Unusual feasting, too many marriages, civil and specially criminal litigations, socail loans at high rates of interest wastage of money on unnecessaries—such as cheap harmoniums, cheap gramophones and worthless bicycles, followed in quick succession. But one thing was remarkable—that the jute cultivator did not improve physically or mentally. Minus the concomitants of quick money making, he was a worse citizen than before, physically ruined by lethargy, and morally degraded by vices which are the inevitable results of artificial standards. When the jute prices went down and the crash came in 1931, we found the jute growers in worse predicament than the steady rice growers of Bengal. More than 50 per cent of the people of this country have gone beyond physical and mental elastic limits. They will never respond normally to general betterment stimuli. They are to be treated in nursing homes and in nurseries as if they were babies for sometime to come. Imitation of western economics has failed. The Indian economist must know that

50 per cent of the adult population of this country are unfit to work and the economist must provide nursing homes for them. They have to be fed, clothed and educated **free** till they are on par.

4. An Industrial Assumption

The Bombay Plan assumes that more the industries the better the manhood. Provided that wealth from such industries are properly distributed and that the people respond to betterment stimuli, there is a **limit** beyond which the standard of living cannot be pushed without hurting the manhood. The general limit is that point at which, dumping of more consumable goods on a man will make him lose his kinship with nature. So this limitation of consumption will inevitably set a limit to the ceaseless increasing of industries unless industries are maintained for economic exploitation of weaker nations or for wastage as for war.

THE PEOPLE'S PLAN

"People's Plan for Economic Development of India" by B. N. Banerjee, C. D. Parikh, V. M. Tarkunde, members of the Post-war Reconstruction Committee of the Indian Federation of Labour.

Assumptions—(1) National Government and (2) Nationalisation of Land. These have been reviewed under Bombay Plan. These are not possible now. There is no real economic plan to tackle the problem as it is today. There is no "blue print for execution."

Unlike the Bombay Plan, the People's Plan starts with agriculture and lays emphasis on mechanisation and collectivisation. Mechanisation is indispensable. By collectivisation, the distribution will not be according to needs, but will be according to ownership. This is unworkable specially in Bengal. Cottage industries have been recommended during the transitional period. "Continually improving standards of living" are a myth. Unless productivity of the machines are controlled and a limiting standard is fixed, over-

production may lead to war or degeneration. Floud Commission's recommendations are unworkable for with small un-economic holding the cultivator will not be able to meet his very common needs. The solution is co-operative corporate ownership, and distribution according to needs. Mechanisation **as advocated** will surely bring unemployment. The ever increasing standard is a myth. So employment has to be redefined.

The redeeming features of the plan are—

(a) Production according to consumption.

(b) Starting with agriculture first.

The feasibility of the plan cannot be tested unless there are "blue prints and time tables". As it is, it is impracticable and inoperative as conditions precedent, namely, a National Government and nationalisation of land, are absent. It has no immediate value.

THE GANDHIAN PLAN

"The Gandhian Plan of Economic Development for India" by Shriman Narayan Agarwal, Principal, Seksaria College of Commerce, Wardah and foreword by Mahatma Gandhi.

According to the author, the "various **fundamental principles** underlying Gandhiji's economic thought" are:—

- (1) Simplicity. (2) Non-violence. (3) Sanctity of labour. (4) Human values.

The chief objective of the economic plan is:—

"to raise the material as well as the cultural level of the Indian masses to a basic standard of life within a period of 10 years".

The conditions precedent to the plan are:—

- (1) Attainment of political freedom (p. 3).
- (2) Nationalisation of land (p. 63).

As the **objective** and the **principles** are to come under operation after the **conditions precedent** are met with, it is

necessary to take into account the conditions first. The Bompay Plan and the People's Plan also assume, that freedom should come first. There is no planning about the attainment of political freedom. In the absence of definite plan with reasonable chances of success to attain freedom the building of a superstructure seems to be useless. No doubt, planning like this may sharpen the intellect, and in some cases, heighten the emotion, but after all it has no practical value **for the present**.

Taking for granted for the time being that political freedom has been obtained, and all lands have been nationalised, it is necessary to find out whether the "**objective**" of the economic plan of 10 years could be achieved by adopting the means prescribed.

The test of an economic plan is in its application. Let the economics of **non-machinism** be applied in case of Bengal. The per capita holding in Bengal is 572 acres. This must produce food, clothing, housing, education, medical help, etc., for a person. This cannot be done unless the land produces $2\frac{1}{2}$ crops per year, i.e., two full crops and one manurial and fodder crop in between. For this, land has to be plowed, seeded and harvested according to time table. This cannot be done with the plowing and cultivating tools and the bullock power in possession of the best of cultivators. Either complete mechanisation or death, all prefer mchanisation to death.

In order to get these fragmented lands into big plots for power cultivation, big plots have to be made out of these small units. The cultivators may resent, nay, even revolt against such procedure. Blood may have to be shed. Gates of jails may have to be thrown open for the resisters. To the ignorant, persuasion fails. **Immediateness** is the essence of the Plan. Either another 3 millions will die of starvation or a few thousands have to be sent to jail and, to take the limiting case, a few may have to be shot. Would we like to see three millions starved to death and may be

another 10 million famished and emaciated or, would we choose the other alternative of applying State violence for the benefit of the majority?

Under the Bengal Plan, provision has been made for 30 yds. of cloth per head per year or 1,830 million sq. yds. of cloth. The All-India Spinners' Association report that the total production of Khadi in 1940 was 9,551,478 sq. yds. or roughly $9\frac{1}{2}$ million sq. yds. At this rate, **about 200 years will be required for all India to produce what only Bengal will consume in one year.** This achievement as made after 20 years of propaganda and persuasion by Congress, whose deliberations were guided all the time by no less a personage than the Mahatma himself, and for which the suffering of the Congress was incalculable. These are realities of life which no amount of emotionalism or mathematical calculations can disprove.

For Bengal, the objective of the plan cannot be realised, at least as regards food and clothing, by following the cult of non-machinism and non-violence (as interpreted by the Gandhian School of Economics). On the other hand, if conditions are not effectively controlled by complete mechanisation of the means of production, whether in agriculture or in industry (specially in cotton industry), half the population will be swept away in next 30 years, and the rest will live devitalised. What is true of Bengal is true of the rest of India.

Thus in absence of the conditions precedent, and with the means adopted, viz. non-machinism and non-violence, the objective of the Gandhian economic plan cannot be realised.

It is now necessary to discuss the fundamentals of Gandhian economics as interpreted by Shriman Agarwal. The four fundamentals are—(1) **Simplicity.** (2) **Non-violence.** (3) **Sanctity of Labour.** (4) **Human values.**

1. **Simplicity.**—This is relative. In a society, say, in remote village, where the usual dress is a loin cloth, the

introduction of a full length dhoti, a korta, a turban and a pair of shoes, would introduce great complicity. The introduction of tubewell and tubewell pumps brought great complicity in our water problem only 20 years ago. Today, the villagers repair pumps, and sink tubewells. The simplicities or complicities are not qualities of any object or objects, but are determined by the conditions of our cognitive powers. The cognitive powers can be cultured by intensive and extensive methods. The culturing of the cognitive powers by intensive methods appears as violent ; for it has to overcome tremendous mental inertia, and hence resistance, in a short time. The culturing of cognitive powers by extensive methods appears as propaganda or persuasion and hence is termed non-violent.

The plowshare and a charkha were machines of pre-industrial revolutionary age. People then must have gazed with wonder the achievements of those wonderful machines. While Europe, and then America, increased the cognitive powers of the people (masses as we are accustomed to call here) by leading them on through the evolutionary stages of the machine, we in India preferred (consciously or unconsciously) to maintain the status quo, and refused to increase our cognitive powers. Today, when the machine grown and fully developed, appears before us after long absence of centuries, we are unable to recognise our own child in him and call him a monster. The more we know him, and the more we know of him, the sooner the complicities will wither away ; and after a short stay and re-acquaintanceship, we shall feel, that we are in company with our own child, grown, developed and rejuvenated. The moment there is a recognition of our fatherhood, the fatherly authority will effectively check his movements, and he will do only so much work as we want him to do to serve our needs and no more. As an obedient and most efficient child, the machine will be at the command of his parents to do all that are necessary, and release the energies of the devitalised parents to recuperate, and evolve according to their inclinations. It

is unwise to disown such a powerful and obedient child, and it will be the height of folly to strangle him.

Thus complicities and simplicities are not inherent in machines, or in non-machines (primitive machines) but are functions of the minds which are able to comprehend, or are unable to comprehend the so-called complicities. To have kept the minds of the people in such a moribund condition for centuries was a sin, which it is possible to atone. But to perpetuate that sin by a false philosophy and incorrect lead, will be height of crime, capable of killing a whole people and incapable of any future atonement. By making acquaintanceship with the machine—by being able to manufacture and repair and use it—the complicities will vanish; and as the cognitive powers will increase, the machine will appear simple. By making every man machine conscious, machine simplicity can be brought to every man. By interchangeable occupation in a "village communism", comprehension of all people, of all the machineries necessary, will automatically come; and the so-called complicated machines will appear as simple as if they were handiwork of the villagers.

2. **Non-violence.**—In ordinary parlance, violence is a physical shock which often upsets the physical balance of a man. In the Gandhian philosophy, it is the shock or impact on the physical, intellectual, moral, or spiritual and also on economic existence of a man, probably in the expectation of producing quick effect, and which shock or impact unusually dislocates the natural balance, and throws the victim beyond elastic limit of endurance in all these planes of existence.

The creed of non-violence has been pushed to the field of economics. What is this non-violent economics? To quote the author (p. 21).

"Gandhiji's economics may also be called Non-violent Economics, because it is the creed of non-violence which colours his economic ideas all along the line. The basis of capitalism is the exploitation of

the 'Surplus Value' of human labour, which is sordid violence. Machine is the hand-maid of capitalism ; it ousts human labour and concentrates wealth and power in the hands of a few."

Putting the arguments in a syllogistic order we have—
Firstly,

1. Basis of Capitalism is exploitation (of the 'surplus value' of human labour).
2. Exploitation (of the 'surplus value' of human labour) is sordid violence.

Therefore

3. Basis of Capitalism is violence.

Secondly,

3. Basis of Capitalism is violence.
4. **Machine is the handmaid of Capitalism .**

Therefore

5. Machine is the handmaid of violence

For the present, if the premise No. 4 is disproved, the Gandhian economics of non-violence is disproved.

Machine is a contrivance for transmitting power or motion to produce a desired effect. The production of the machine reflects the attitude of its creator or designer. The attitude of the designer is influenced by environmental philosophy and economics. In a money-making environment, machines will be produced to make money for its creator. It may be handmaid of capitalism, socialism or communism which are all different branches of Vaisyaism ; or it may be handmaid of Khatryaism or may even be of Brahmanism. The remedy therefore lies not in eradicating machines or replacing the same, but in creating environment for changing the attitude of men. Thus, there cannot be anything as non-violent economics.

3. **Sanctity of Labour.**—In the process of all round evolution of man to the height of a superman, the outward bearing of the man changes as the self-evolves. The bearing at any one stage reflects, as it were, the totality of the man.

In that march of man from the ordinary and the explicable, to the super-ordinary and inexplicable, the different stages of the bearing of a man are signified by different connotative words. The word "dignity" signifies the bearing of a stage of explicable man. The word "sanctity" is used in case of a man whose actions are inexplicable to the ordinary man.

The continuous march of man—from the ordinary to the super-ordinary—involves intense "labour" (work) in material, mental and spiritual planes. In this process of advancement, from the physical to the spiritual, harmonious development of the physical is a necessity, inasmuch as a container is a necessity for the things contained. When systems are mastered by which the physical can be well kept, without taking recourse to general physical exercises (not to speak of manual labour), the necessities of crude physical exercises may be eliminated. The body has to be kept in perfect order so that mind may function. For the upkeep of the body, wholesome food and healthy exercise are necessities. "Manual labour" used to bring some food, and some exercise, to the man before. In olden times, slogans like "dignity of manual labour" were given, from the pulpit and from the platform, to induce the mere man to activity ; just as the injunction as to Heaven and Hell used to keep him in moral path. At present we find that no amount of "manual labour" unaided by machine, can give him food or clothing. As regards keeping his physical body in good condition, "manual labour" may prove very often injurious. In some kind of "manual labour", only a part of the body, say, a right hand, is overworked, when the other parts remain inactive or undeveloped. So, when harmonious development of body and mind is wanted, manual labour is ineffective, insufficient and is often injurious. In any scheme of evolution of man, **releasing** of his energies is necessary, so that the released energy may be utilised for education, evolution, etc. **Leisure** signifies temporary inactivity. **Release** signifies change of occupation. Releasing the energies of the people is necessary for progress. "Dignity of manual

labour" is a slogan of preindustrial—revolutionary age. To-day, this slogan is obsolete as man, aided by machine, can release his energies for self-evolution, which after all is the ultimate goal of life. Besides the slogan—"Dignity and Sanctity of labour", will help perpetuating the **caste system**. We can do away with a sweeper caste, by replacing him by machines, and thus making his occupation interchangeable. But with a misleading philosophy intruding upon practical economics, we can neither do away with the caste, nor can we "sanctify" his labour however much we try to sugar-coat it. Democracy is not possible amongst unequals and in a society of non-interchangeable occupation, i.e. in a society where caste predominates, and the mind degenerates.

Thus, the fundamentals of Gandhian economics, so far as non-machinism and "dignity of labour" are concerned, are means of perpetuating the Caste System ; are antithesis to Democracy, and are therefore impediments to all round evolution of man.

4. **Human Values.**—Of the four "fundamental principles underlying Gandhiji's economic thought", the first three, viz.—Simplicity, Non-violence and Sanctity of labour—are inoperative and misleading. The fourth one—Human values—is truly fundamental and as such should be given predominant thought by anyone who wants to plan for Bengal or for India.

FLOUD COMMISSION

The Commission has recommended that all tenure holders and zamindars must go and only cultivator should remain. So, there will be nobody between the State, who would own the land, and the cultivator. The Commission says that the cultivator's holding is **uneconomic** and that is the reason for his calamities. The Commission also says that the "Rent is one of the least important items in the cultivator's budget. We are not prepared to say that there is any difference between the economic condition of a rent free, and a rent-paying cultivator" (page 87, Vol. I).

Now, the only thing which a cultivator cares for is his **income**. So long he has to pay (say) Rs. 3/- per acre as rental for his lands, he does not care whom he pays. The Commission has recommended nothing to improve the economic condition of the cultivators, excepting a few ordinary palliatives which are nothing but platitudes. So long a cultivator has to pay Rs. 3/- for his rent, he cares mighty little whom he pays or made to pay. So, the removal of zamindars and tenure holders does not improve his lot any. He may have some spiritual satisfaction of being directly under the State—which has no heart, in which the cultivator has no say, and over which he has no control.

Thus from the cultivator's point of view, the Floud Commission has proved more than a useless **hai chai ism**.

XIII. HOW THE GOVERNMENT OF BENGAL CAN HELP US

It has been said before that there is nothing in this plan which the Government cannot do right away. Immediate-ness is the essence of this plan. The Government of Bengal, as it is today, can reconstruct Bengal in 5 to 10 years if they either accept the recommendations or help the planner towards execution of the plan. The Government of Bengal can do the following:—

1. Help **acquisition of lands** for C-towns under Land Acquisition Act.

2. They can set up **Power plants** in the colliery district for supply of power to the Burdwan Division at present up to Calcutta. If they cannot do that themselves, they can invite capitalists to do the same provided the plants are run under Government control.

3. From the Disposal Department, the Government can get the following machineries and machine tools for C-towns at least.

Tanks ; Trucks ; Engines ; Trailors ; Pipes ; Motors ; Road Graders ; Machine tools such as Lathes, Drills, Saws,

Milling and Shaping machines ; Gear cutting machines ; other accessories ; Welding plants.

(It is necessary to get a list of other machineries and tools which the Disposal Department possesses.)

4. The Government can set up conversion plants to convert

- (a) The tanks to caterpillar tractors.
- (b) The petrol engines to kerosene engines
- (c) The military trucks to farm trucks.
- (d) The road engines to marine engines.
- (e) The surplus steel to agricultural implements.
- (f) The hauling machines on trucks to huge boring machines.
- (g) The jeeps for pulling farm trailers.

5. The Government can set up a **Fabrication plant** for making power boats for fishing. The machineries for these can be obtained from the Disposal Department.

It may also be possible to get the capitalists or the companies already in industry, such as the Burns, Braithwaites, Jessop etc., to do the work and the Government helping them with Disposal Department machineries.

6. As most of the engines will run on petrol, the Government of Bengal can persuade the Government of India to sell **petrol** to the Vakris for **productive purposes**, without any **duty**. Petrol can be sold at, say, eight annas per gallon. With this cheap petrol and the engines of the Disposal Department, the Government of Bengal can revolutionise the Agriculture of Bengal in 5 to 10 years and can make Bengal a land of **No Famine** within this reasonable time.

7. In **Deep Sea Fishing** the Government of Bengal can get the fishing boats made and help training men to deep sea fishing and supply them with necessary equipment or help formation of fishing companies and give them priorities necessary.

8. In **Finance**, the Government can arrange with the Reserve Bank to lend to the Provincial Co-operative Bank so that the Co-operative Vakri township can get advantage of this money through Central and town Co-operative Banks.

XIV. CONCLUSION

The Problem of Bengal is **Regeneration** and not ordinary Economic Reconstruction. More than half the people are devitalised and are incapable of doing labour. To revitalise them, it will be necessary to release their energies for recuperation for sometime to come. So, fully fifty per cent of the people have to be fed and clothed free to bring them up to normal level.

The per capita holding in Bengal is 572 acres of land. On this uneconomic holding, stands the Bengal Farmer producing jute and paddy, both of which are non-paying, i.e. the selling price is less than the cost of production. Both as regards foods and clothing, Bengal is a deficit province. Most of her lands are under one crop, i.e. paddy.

If Bengal has to live, she must produce two and a half crops on the lands on which she is producing only one. This can only be done by complete mechanisation of agriculture. Mechanisation is only possible on large plots. As the resources are meagre, collective farming is not possible. Collective Farming presupposes prorata distribution of agricultural produce, which keeps the landless eternally hungry. A minimum living condition has to be given for all. The only solution lies in **Joint Ownership** of all township lands by the Co-operative township. The lands to be indivisible for all times to come. The lands to be cultivated by the town Co-operative and the produce to be distributed among the members according to needs.

On this basis, Bengal has to be divided into about 20,000 towns each having a population about 3,000. Nine such towns will form a group. The central town, to be known as C-town, to be the leading town with all machineries of production of consumable goods, and all agricultural machineries. In the beginning, only C-towns have to be started about 2,000 of them.

These C-towns will form the nuclei of V-towns (Vakri towns) and will bring them into existence by example, propaganda and constructive help. It is expected that in course of 10 years, the whole province can be absolutely stabilised.

The starting point should be in West Bengal near colliery districts. Centralised power stations could be started near the coal pits and transmitted through these towns. The lands are high and produce only one crop. When success is shown on these lands, it will be easy to work on more fertile lands away from Calcutta.

It has been estimated that on an average, a sum of Rs. 5 lacs will be required for each town. This sum will be for purchase of lands (about 2,000 acres for each town), building of houses (about 500 in each town), purchasing of agricultural machineries and industrial machineries for C-town only. If everything has to be paid in cash, for starting of 2,000 C-towns it will require 100 crores in 10 years. The lands can be paid by co-operative bonds. The Disposal Department machineries (for which the India Government has already paid), can be had on 10% of the original prices payable, say, in 10 years. Only these two item will bring the figure down to 50 crores. About 25% of the plan will be given effect to in the first five years. On this basis not more than 15 to 20 crores will be necessary in the first five years. The Co-operative town economics has been so arranged that repayment of the loan will start from the 5th year, and will be paid off in another five years. The Co-operative township will be paying interest on the borrowed amount every year. Thus, all that the Bengal Government will have to do, will be to stand surety for a sum of Rs. 25/- or 30/- crores in order to give effect to this plan.

The plan has been so made that immediate effect can be given to it. In fact, work can be started even now. The present Bengal Government has all the powers necessary to

give effect to it right away. Bengal's problems, unlike those of other provinces, are different. The people of Bengal are devitalised and are dying. Without immediate redress, Bengal will perish. So, she cannot wait for National Government or complete Nationalisation of Land or for complete Fiscal Autonomy. She has to work out her immediate future through the structure of the present Government.

Finally, His Excellency, the Hon'ble Mr. Casey has appealed to the favoured one million of Bengal to help the downtrodden 60 millions. Perhaps, Mr. Casey does not know, that, many an attempt to serve the people were crushed by the very Government, which he has the honour to represent today. The **Bagda Farm on which experiments were made for more than a decade, to find out ways and means to solve the food problem of Bengal**, did not want a single cowrie from the coffers of the Government of Bengal, nor an ounce of brain from their high browed officers. The workers would have been content if they were allowed to work out their own destiny, and help their countrymen by their path finding labours. But that was not to be. The organisation had be crushed, in whose interest we do not yet know. Someday, the woeful tale will be told to the public. Hundreds of other organisations, may not be as ambitious, met the same fate.

The past is past. In Mr. Casey we find a man made of "sterner stuff". In him we find the determination of a colonial, whose forefathers had to do infinite struggle against odds in a new land. Rehabilitation of Bengal will, I am confident, not present a great difficulty to him.

Will he put his shoulder to this great task, and allow the "favoured one million" to co-operate with him, so that the downtrodden 60 millions may be helped, regenerated and rejuvenated.

I put this question straight to him.

XV. APPENDIX

APPENDIX—A

Extracts from pamphlet on **Vakrism** by the author
published on 18-8-33.

“Mechanised plantation why?

“On a big scale, cultivation with machineries (tractor, etc.) is cheaper and manageable. To manage 1,000 bighas of land, it will require at least 50 pairs of bullocks and 50 men, while it will require one good tractor and say 2 men. Tractor cultivation is cheaper. Due to this, Australian wheat could be sold at Calcutta for Rs. 1/12/- per maund in 1931”.

“The Genfarmers (Vakris) are all middle class educated men unused to work in hot sun with bullocks or hoes. It is not possible to change their hereditary habit overnight, and make them tillers of soil. To make them earn from their own lands, machines must be used.

“The economic evolution of Bengal points to one fact only and that is this:—the tillers of the soil are going to be the masters of the soil. If the middle class (the parasites so long) want to live, they must be stabilised on land, of which, about 3 crore bighas are available at present in Bengal. To maintain the standard of living, more bighas have to be cultivated per capita than is the case with ordinary cultivator. For their physical unfitness and bigger acreage,, machine cultivation is the only solution.”

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Genfarmers—(a) Who? (b) Why?

“Gen is abbreviation of the word gentleman. Gen-farmer is a word coined by us to mean—Gentleman Farmer. The Bengali word for this is “Vakri” (Va—Vadra ; Kri—Krishak) which means ‘Vadra Krishak’. Any middle class educated man approved by the farm can become a Gen-farmer. Every Genfarmer has to become a member of the Bagda Farm, has to take lease of lands under the farm, has

to live on his own land maintaining a certain minimum standard of living. He will be helped by the farm both in production of his crops (by renting machineries and giving expert advice and direction) and sale by buying up the economic crops (sugar cane) for the mills.

"Genfarmism is an economic movement. It aims at stabilising the middle classes of Bengal by agriculture and agricultural industry. Middle classes, up till now, depended on Government and landlords on one hand, and the cultivators on the other. But now he is threatened with extinction as none is coming to his rescue. His parasitic profession must be given up for long time to come, and he has to go back to the land.

"The educated middle class cannot possibly cultivate land in the ordinary way for (i) he is physically unfit to do so and (ii) his income would be insufficient to maintain his standard of living.

"Therefore, he must acquire bigger area per capita and must use machineries for cultivation.

"But he is not rich enough to buy all the machineries himself, nor does he know much about agriculture.

"Therefore he must obtain these machineries on rental and get the agricultural advice and direction from some central organisation which has all these machineries, and which has men to advise and direct.

"This central organisation is the Bagda Farm.

* * * *

"The farm was started about 5 years ago on 2,300 bighas of land as private venture."

* * * *

"At present, the farm owns about 15,000 bighas of land (about 5 thousand acres). The lands are situated on the river Bangali (Korotoa) which is navigable during the whole year".

* * * *

"The Bagda Farm has got all machineries for breaking, for plowing, base-manuring, seeding, covering, ridge opening, off-barring, ditching, etc.

"At present it has got seven tractors which are going to be supplemented by more powerful tractors this year."

* * * *

"At present there is one pumping station on the river Bangali. The centrifugal pumps installed in the pump pit have a combined capacity of about 2 lac gallons per hour."

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"There are two more pumps ready for the next pumping station which will be constructed this year at about one mile from the present pumping station."

* * * *

GENFARMISM AT BAGDA

The practical ideal of Genfarmism is (A) to set up a standard of living consistent with (1) the modern scientific development of agriculture and agricultural industry ; and (2) the standard of education and culture of the middle classes.

"(B) To devise and practicalise ways and means, with the help of agriculture and agricultural industry, by which such standard can be established and maintained".

A. Standard of Living

"No Genfarmer should be required to work more than 3 or 4 hours a day for his family. The rest of his time should be devoted to education, culture, welfare work, etc.

"The standard of food should be such as to maintain his health in perfect condition.

"Every Genfarmer should always have in store at least two years' food for his family.

"The co-operative organisation of which he has to be a member should ensure medical help and education for his family.

"His house, however small should be made according to design and standard given by the Central organisation and must be fitted with modern equipments."

B. Ways and Means

"For the maintenance of the above standard of living, the Bagda Farm has done the following:—

"Genfarmers have been given lands in compact plots on both sides of the Central Farm. No Genfarmer (Vakri) has been allowed more than 100 bighas or less than 20 bighas.

Genfarmers are to grow economic crops (sugarcane, etc.) on at least half the land ; the other half has to produce food crops for his family and storage.

"The lands are cultivated by tractors, etc. owned by the Central Farm under contract system so that the individual Genfarmer may not own any cultivating implements.

"The Central Farm will buy all canes produced by the Genfarmers (i.e., for the production and sale of the main produce, the individual Genfarmer is relieved of such trouble).

"The Central Farm has engineers, mechanics, agriculturists, etc. to advise and direct the Genfarmers either in matters of cultivation or building houses or any other construction.

"The Bagda Farm has by this way distributed about 9,000 (nine thousand) bighas of land to Genfarmers."

APPENDIX—B

Lantern Slide Lecture by

A. C. CHAKRAVARTY, M.Sc., B.S.,

at the Rajsahi Provincial Conference

(Reprinted from **Liberty** of the 26th April, 1930)

FOOD PROBLEM IN BENGAL

Impending Disaster. Substitute Power Farming

Bengal to be Khasmahal

"Bengal will be a Government Khasmahal within ten years and her lands leased out to foreign capitalists who

will make Power Farms out of these lands unless parasites become producers and lessen the burden of the cultivator through Power Farming and agricultural industry", said Mr. Akhil Chandra Chakravarty, M.Sc., B.S. (Illinois), Engineer and Chemist, in course of an interesting lantern on "Food Problem in Bengal and its solution" delivered at the Rajshahi Conference compound.

The economic burden of Bengal rests on the slender neck of the starved farmer of Bengal. Zemindars, Jotedars, Lawyers, Professionals, Traders, Loan Offices and finally the Government—all depend upon the cultivator for their existence. The slender neck of the Ryot is supporting this heavy load—"The Basket of Burden"—on his head. He is the only producer. His sources of income are (1) Jute and (2) Paddy. Both jute and paddy do not even pay the cost of cultivation. The average cost of production of jute is Rs. 7-4 per maund and that of paddy about Rs. 3/- per maund and the market price is often much below this cost price. The cost price includes the wages of the Ryot as labourer but not the interest on borrowed money or legal expenses.

CASE OF WASTED ASSETS

Paddy and jute keep the farmer busy for only 6 to 7 months in a year. The rest of the time he is idle. He has no other source of income. His debts are continually increasing to meet the demands of the landlords, loan offices, lawyers and others. He is daily consuming his assets. The Mymensingh cultivator is migrating to Assam today. His is a case of Wasted Assets.

The ability of the cultivators to pay is based on four factors:—(1) Productivity of the soil, (2) Means of cultivation, (3) Finance, (4) Physical fitness. So far as Bengal cultivators are concerned all these factors are against him. Productivity of his soil is daily diminishing, his means of cultivation is antiquated, facility for finance is meagre for his

needs. Manuring is beyond his means and his physical fitness,—already at a very low ebb is daily becoming worse.

As the whole economic structure rests on the shoulder of the Ryot, and as cultivation by the present method is non-paying even as regards his cost of production, inability of the cultivator to pay rents and taxes, interests on loan, fees to professionals and legal expenses, will ultimately bring about a collapse of the whole economic system and consequent Revolution.

Government with the help of foreign capital and army will tide over this Revolution. Taking advantage of the zemindars' inability to pay revenue they will make Bengal a Government Khasmahal.

SAVE THE REVOLUTION

If Bengal is to be spared this dire fate, proceeded Mr. Chakravarty, immediate steps should be taken to stabilize the cultivator by (A) Increasing the productivity of the soil and (B) by lowering the cost of production.

(A) Increasing the productivity of the soil means (a) Better cultivation which pre-supposes better tools and implements and means of speedier cultivation ; (b) Better seeds ; (c) Proper manuring and (d) Timely proper irrigation. All these require farmers' ability to pay for them. The Ryot farmer cannot afford any of these as his financing ability is almost nil.

(B) The cost of production may be lowered by (a) Increasing the productivity of the soil and by (b) Lowering the cost of (1) Plowing ; (2) Harrowing and laddering ; (3) Seeding ; (4) Irrigation ; (5) Harvesting ; (6) Threshing etc. This can only be done by Labour Saving Power Machineries.

As both A and B are beyond the means of the Ryot cultivator, the lands should be transferred to such persons or companies who can finance and manage lands efficiently. This, of course, should be done "without letting the interest of the Ryot to suffer."

Australian Wheat and American rice are threatening the markets of India. Last year, more than 8 crores of rupees of imported wheat were sold in India. As regards jute there is a systematic attempt to (a) "produce" and to (b) "find substitute" for Jute in other countries. The drawbacks of power farming the jute are—(1) handweeding and (2) cutting ; steeping ; retting and washing of jute, as these require hand labour. Machines are already in the market which will make it unnecessary the process of steeping and will extract jute directly without retting. Cutting problem has been solved by special reapers. Weeding is the only problem which is being solved by the power farmers. As soon as this is solved (which we expect to be done in 2 or 3 years), power farmers all over the world will take up jute farming and it will cost them not more than Rs. 1-8 per maund to produce jute. "Overnight the production of jute will be transferred from the hands of Bengal Ryots to power farmers of other countries." Mr. Chakravarty continued—

"Think of U.S. rice and Canadian and Australian wheat flooding India."

"Imagine a situation when Bengal Jute will be undersold at least 75 per cent, by power farmers of the world."

WHAT'S NEXT?

"Lands to go down in prices. Most of the Banks and Loan Offices will fail, for the mortgaged lands will not fetch even a fraction of the mortgaged value. Lawyers, who directly and indirectly are fed by Ryots have to stop business. Zaminders and businessmen will follow suit."

THE SOLUTION

"Can we save the situation? Can we devise practical means of stabilizing the Ryot and so stabilize the whole economic structure asked he."

"Yes—the solution is simple."

1. "Buy up all fallow and waste lands and start Power Farming.

2. Acquire cultivated lands from ryots in exchange of shares of Joint Stock companies of such area as will be fit for farming with power. By this the inefficient farmer becomes a share holder of the company. He also will earn much as wages by working in the farms. The small plots of ryots are useless for power farming ; big plots can be made either by (a) buying up their lands by which the ryots will be turned into coolies or by (b) acquiring lands in exchange of shares by which the ryots' interest is kept intact. By this he becomes member of the "**Collective Power Farmers**".

3. Starting "decentralized" Agricultural Industry—such as manufacturing oils from seeds, rice, flour, gur, sugar, gunny, etc. "in agricultural centres" (and not in industrial centres of today). This agricultural industry to have a centralized guidance and control.

These above will function through

(1) an Agricultural Syndicate and

(2) a Financial Syndicate which will co-ordinate the activities of different organizations.

As the Political Government of Bengal has its various departments, so these Syndicates will have their own departments of Agriculture, Industry, Irrigation, etc. with Bureaus of Research and Invention. This may fairly be termed—**The Economic Government of Bengal**—with self-imposed responsibility of feeding the nation.

That is Government within Government but running parallel to it.

APPENDIX C.

JUTE

Jute has been termed as the **major cash crop** of Bengal. Assemblies, Councils, platforms, presses, all are full of jute talks. We have been taught to think that—with jute we live and without jute we die. This jute mindedness has been a curse of Bengal as will be seen presently.

The Bengal Plan is based on the broad assumption of **Production and Distribution according to Needs**. The needs of jute in this scheme of life is meagre. Therefore, the subject of jute has been treated in the Appendix. The reading of the **Vitality Curve** of Bengal shows, that the appendix jute is showing symptoms of appendicitis, and so, many have to be operated upon.

Jute, as major cash crop of Bengal, has brought cash to the middlemen and to the manufacturers of jute, but has brought neither cash nor credit to its producers, or to the suffering "sixty millions" of Mr. Casey. To them, jute has brought disease, devitalisation and untimely death. **Since 1930, the price of jute has not paid for its cost of production.** Therefore, part of the cost of production of jute (a non-paying crop) has surely come from the inherited potential energy of the jute growers. Due to long suffering, this potentiality has been exhausted, and the jute producers are on the verge of physical bankruptcy. He is physically, mentally and financially ruined. Jute, during these years, have made the rich—richer, and the poor—poorer. The only people benefited are the Marwari middleman and the manufacturer Scotchman.

Again, jute has been styled as **monopoly** business of Bengal. The monopoly we are told is due to peculiar climatic and soil conditions. Jute is being produced in other parts of the world specially in South America. The markets are being flooded with substitute fibres of jute. Modern

agronomy will be able to adapt jute to almost any soil and climatic condition. The monopoly is due very little to the natural conditions, as such conditions are also obtained in other parts of the world. The extreme poverty of the jute-grower of Bengal, has driven him to surrender to such abominable conditions of production (such as washing of retted jute) as no other farmer of any part of the world will ever agree to submit to. I have not seen the **Letters Patent** which the jute-grower of Bengal must have obtained from the middleman and the manufacturer to enable him to carry on with his monopolistic production, but I presume something like this is written on this parchment:—

“To the Jute-grower of Bengal

“By virtue of your ability to **dive in filthy water**, at least 400 times a day for harvesting the crop, thereby injuring your health for the benefit of jutedom, and

“By virtue of your ability to **wash the retted jute**, standing waist deep in the dirtiest water possible, for at least 10 hours a day, thus bringing on you the havoc of all sorts of skin diseases, for the cause of serving the major cash crop of **our** Bngal, and

“By virtue of your ability to **live in a stinky atmosphere** vitiated by foul gases from retting of jute oblivious of poverty, disease and pestilence, for the great ideal of holding the right of a monopolistic production of the rare commodity—the jute,—you have earned the right, title and honour of holding a monopoly of jute production. And we, on behalf of the congregation of jutism do hereby declare that you are a fit and a legitimate person to be granted the Letters Patent for holding monopoly of production of jute till you, your children, your successors or assignees clear out of **our** Bengal by merciful acts of God such as poverty, disease, pestilence, devitalisation and premature death.”

The jute-growers of Bengal hold the same kind of monopoly as the methar (sweeper) holds for carrying the nightsoil on his head.

Due to the production of the major cash crop and the monopoly of it, the vitality curve of the peasants is sloping down and the mortality curve is ascending.

Any plan which aims at the real benefit of the people must not make provision for the production of jute according to the present method. If jute has to be produced, at least **retting and washing have to be mechanised**. The **ferment** for retting of jute has to be found and arrangements for retting jute in cemented tanks quickly, with hauling arrangements, have to be made. **Machines** have to be designed and manufactured for washing the jute. Arrangements for quick changing of tank waters by pumping or in case of high tanks, by gravity, have to be made. The Vakri C-towns will be able to handle the situation without much difficulty.

For future jute production and industry, the following have to be done:—

- (1) Finding out methods of mechanised weeding and of harvesting in water.
- (2) Finding out methods of quickly fermenting (retting) in the tanks, and the methods of changing of stinky waters from tanks.
- (3) Designing and production of machineries for washing jute.
- (4) Finding out methods of softening jute and producing jute cloth for shirtings, coatings, pantings and for blankets (mixed with wool and cotton), etc.

Science Association and Jadabpur Engineering College may be entrusted with this work.

